

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1232. (Vol. XXIV. No. 32.)

AUGUST 5, 1932

Weekly, Price 6d.
Post Free, 7½d. Abroad, 8d.

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone: (2 lines), Holborn 3211 and 1884.

Telegrams: Truditur, Westcent, London.

Subscription Rates, Post Free.

UNITED KINGDOM			UNITED STATES			OTHER COUNTRIES		
	s.	d.					s.	d.
3 Months ...	8	3	3 Months ...	\$2.20		3 Months ...	8	9
6 " ...	16	6	6 " ...	\$4.40		6 " ...	17	6
12 " ...	33	0	12 " ...	\$8.75		12 " ...	35	0

CONTENTS

	PAGE
Editorial Comment:	
Coast Defence and Volunteers	721
Value for Money	722
Zurich Meeting	723
Cambridge University Air Squadron	727
Private Flying and Gliding	729
The Miles "Satyr"	733
Air Transport: Bleriot Transatlantic Seaplane	734
Airport News	736
Airisms from the Four Winds	737
Correspondence	738
The Industry	739
Royal Air Force	741
Air Post Stamps	742

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- Aug. 6. Newcastle Air Meeting, Cramlington.
- Aug. 6. London-Newcastle Air Race.
- Aug. 6. Cramlington Air Race.
- Aug. 6-7-8. International Air Meeting, Le Zoute, Belgium.
- Aug. 11-28. International Touring Competition, Berlin.
- Aug. 15-16. Cricket: R.N. v. R.A.F. at Lords.
- Aug. 19-21. 4th Annual Canadian Air Pageant, St. Hubert, Quebec.
- Aug. 20. Ryde Air Pageant.
- Aug. 25. Folkestone Aero Trophy Race.
- Sept. 3. Leicester Chamber of Commerce Day, at Desford.
- Sept. 4. Divine Service at Ratcliffe Aerodrome, 2.30 p.m.
- Sept. 5. F.A.I. Conference at The Hague.
- Sept. 8. International Meeting, Vicenza, Italy.
- Sept. 24. Hillmans' Air Display at Maylands Aerodrome, Brentwood.
- Sept. 24. No. 45 Sqdn. R.A.F. Reunion Dinner, at Overseas League Club House, Park Place, S.W.1.
- Sept. 25. Gordon Bennett Balloon Race, Basle.
- Oct. 1. Bristol and Wessex Ae.C. Garden Party.
- Oct. 18. Aero Golfing Society: Cellon Challenge Cup, West Hill G.C.
- Nov. 18-Dec. 4. Paris Aero Show.

EDITORIAL COMMENT



IN our issue last week we recorded somewhat briefly the outline of a scheme announced by the War Office for handing over the defence of the British coasts to the Territorial Army. The feature of the scheme which is of interest to readers of FLIGHT concerns the anti-aircraft units. It is stated that these will be provided either by the conversion of existing coast defence units or by the conversion of field and medium batteries suitably placed for immediate manning duties in war. All ranks in these units will be required to sign an agreement to come up for service as and when required, whether the Territorial Army has been embodied or not. These are exacting demands, and it is hard to see how a man in regular employment can fulfil them. A concession is made in the matter of age.

The extent to which we are now entrusting our safety to voluntary effort is remarkable. The Territorial Army is to have charge of our coast defence, including the anti-aircraft units. A very considerable proportion of the Air Defence of Great Britain is composed of the Auxiliary Air Force. For information about air raids we are relying on the Observers Corps of special constables. That we are able to make such use of voluntary effort is a matter for pride. It shows the patriotic spirit of the British people. At the same time, the movement contains elements of risk.

There was once a sort of vague idea that when a man had entered the regular Army or Navy, either commissioned or otherwise, he became, *ipso facto*, a brave man; and when the Volunteer movement started in the reign of Queen Victoria a good deal of ridicule was lavished upon it. This was very ill-conceived, for the mainstay of British defence for centuries before had been the Militia. Its history is as old as the history of the Angles and the Saxons, and it was the Militia (with a small regular nucleus) which put up the magnificent and almost successful defence against the invaders at the Battle of Hastings. Crecy and Agincourt and many other battles were

won by the archers trained in the Militia and specially enlisted for service abroad. In the Great War the Territorials and other civilian troops, temporarily enlisted, finally proved their worth.

The problem nowadays is one of training. Bravery is not enough by itself. It was the indifferent training of some of the old Volunteers which was the real justification for the ridicule directed against them. Of course, it was the same in the days of the Hundred Years' War with France. Untrained militiamen would have been useless. But then archery was the popular sport of the day, and so the man who enlisted for service in France was already an expert in the use of his weapon. A large number of Victorian Volunteers were good rifle shots, but rifle shooting on a range has never been the most popular national sport, while infantry drill was positively distasteful to large numbers of the Volunteers. The last few years has seen a sort of reversion to the conditions of Plantagenet times. Flying is rapidly becoming one of the most popular sports of the day, and so the officers of the Auxiliary Air Force Squadrons feel it no hardship to devote the whole of their leisure to training in air work. Their training is, in fact, their favourite recreation. The number of flying hours of the A.A.F. squadrons tells its own tale, and the photographs published from time to time in *FLIGHT* have shown how well the pilots can perform in the air. In fact, we feel no anxiety at all about that part of the national defence which is entrusted to non-regular airmen.

Our air-defence scheme must break down if the Observers Corps is not of the very best. The raiders must be spotted quickly and accurately, and the reports must go in to H.Q. literally like lightning. Any lag may spell disaster, for the raiding bombers will have had time to get through and do their fell work. Fortunately, whenever air exercises have been held, the Observers Corps have done their work very well indeed. The only disturbing question is whether that corps is strong enough in numbers and covers the whole of the area which has to be defended. It is understood that while there is no conceivable danger of air invasion, the defence programme may be developed by stages; and so some shortage, if there is a shortage, is not a matter for alarm. It has to be realised, however, that there will be no time to train air-defence units after the outbreak of hostilities. They must be at work in the highest state of efficiency from the very moment of the declaration of war. Will it ever be possible, we wonder, to bring the corps up to full strength and efficiency in time of peace? If it is not, then we are running a very serious risk.

The anti-aircraft units, searchlights and guns, have this in common with air squadrons, that the equipment makes a fascinating appeal to a certain type of man. There is no one so fond of a busman's holiday as an engineer; and guns and electrical searchlights are a lure to men of a mechanical turn of mind. The actual operation of the equipment is fairly easily learnt. The great difficulty of the guns is to hit a target moving in three dimensions. Modern rangefinders relieve the gun team of most of the problems, but the inconsiderate pilot may change his speed, height, or direction while the shell is travelling towards him. The lights have another sort of task; but both must work in the closest co-operation with the fighter squadrons. These last are very highly trained regulars, and their training

is an expensive matter. Much of the cost of that training will be wasted if the guns and lights are not on the same plane of efficiency. All the various volunteer forces are fully capable of attaining high efficiency, provided that enough time is devoted to training, and provided that sufficient numbers are recruited. It is a serious question whether an appeal to patriotism is enough to secure that those two conditions are fulfilled.

❖ ❖ ❖ ❖

In our correspondence columns we publish this week a letter which deserves to be read by manufacturers and users of aircraft alike. Our correspondent, Mr. A. H. Downes-Shaw, has done a great

Value for Money

deal for aviation, not only as a private owner of aircraft but also through his very good work for the Bristol and Wessex Aeroplane Club, Ltd. His

views are, therefore, worth careful consideration.

Briefly put, Mr. Downes-Shaw complains that there has not been, in aircraft suitable for the private owner, the same increase in value for money as that which has been seen in the motor-car world. Few will probably dispute Mr. Downes-Shaw's statement. On the face of it one may easily show, by facts and figures, that his contention is right. Where, it seems to us, our correspondent may be criticised is in his comparison between the aeroplane and the motor-car. To us it would appear that it is scarcely logical to compare the two.

In 1927, the year when Mr. Downes-Shaw bought his first aeroplane, the motor-car industry was already well established. The aeroplane industry was not, using the expression to denote that part of the industry which built aircraft suitable for the private owner. In 1927 private aeroplanes were being built in relatively small numbers, and were consequently fairly expensive.

By the time Mr. Downes-Shaw exchanged his first machine for a new model, *i.e.*, by 1929, the output of aeroplanes had greatly increased and the larger production had resulted in lower manufacturing costs. And now, three years later again, Mr. Downes-Shaw complains that an exchange is not as favourable. During the last year or more, the general depression has resulted in a smaller demand, and aircraft production has slowed down very greatly indeed. That partly accounts for the higher prices. Then it should also be borne in mind that aircraft have, on the whole, maintained a much higher second-hand value than have motor-cars.

For all that, our correspondent has a good deal of reason for his views, and it would be interesting to have the replies of aircraft manufacturers.

Turning from the financial to the practical side of the question, Mr. Downes-Shaw complains that so little progress has been made with what he terms the "blunder-proof" aeroplane (a very apt expression, much more descriptive than "fool-proof"). His lament that the "Gugnunc" is still only an exhibition machine will be shared by few. The "Gugnunc" was designed for a special competition, and is capable of amazing things—but only in the hands of a highly skilled pilot. But, apart from that, the 1932 aeroplanes do get out of and into small fields very much better than did the 1927 machines. Whether they are very much safer is, perhaps, open to discussion, and again we would welcome the views not only of constructors but of users.



WINNER OF THE RACE FOR TWO-SEATER MILITARY AIRCRAFT: The Fairey "Fox" (Rolls-Royce "Kestrel") of the Belgian Air Force, which did the "Circuit of the Alps" at an average speed of 160 m.p.h.

The Zurich Meeting

THE aviation meeting held at Zurich, Switzerland, from July 22 to July 31 was partly national and partly international in character. It was organised by the Aero Club of Switzerland. Last week we recorded that the speed contests for military aircraft over a triangular course, Zurich-Thun-Bellinzona-Zurich, were won by a Hawker "Fury" (Rolls-Royce "Kestrel") in the single-seater class and by a Fairey "Fox" (Rolls-Royce "Kestrel") in the two-seater class.

In the private owner's or "touring aircraft" class there was an international rally and a subsequent competition. The rally was flown to the following formula, machines being limited to a tare weight of 600 kg.:

$$N = 200 \left(\frac{r}{R} + \frac{v}{V} + \frac{l}{L} + \frac{P}{p} \right) + C.$$

The various letters have the following significance: $N = \frac{V_m}{W}$, the total number of marks gained by a competitor. $r = \frac{V_m}{W}$

where $V_m = \frac{l}{t}$ = mean speed over distance l without deducting time of stops from total time t .

t = total time elapsed between time of starting and time of crossing the arrival line at Dübendorf. W is the



THE PILOT OF THE "FOX": Capt. Van der Linden, of the Belgian Air Force, and His Passenger.

engine power per person carried in the machine. R is the highest value of r attained by any one of the competitors.

All competitors had to approach Zurich via Basle, and in the formula v is the average speed of a competitor between these two towns.

V = greatest speed of any between Basle and Zurich.

l = the distance flown by the competitor, this distance being counted as the sum of the straight-line distances



A WINNER IN THE COMMERCIAL CLASS: The Junkers Ju. 52 3-m., with three "Hornet" engines of 525 h.p. each, manufactured by the B.M.W. Company.



WINNER IN THE SINGLE-SEATER CLASS : The Hawker "Fury" (Rolls-Royce "Kestrel") and its pilot, Capt. Sintic, of the Yugoslav Air Force. The "Fury" won the race at an average speed of 201 m.p.h.

between landing points. The greatest distance flown by any competitor is denoted by L .

p denotes the wing loading, in kg./m², of the competitor, and P the highest wing loading of any competitor.

The wing loading was calculated according to the formula: $\frac{\text{weight empty (kg.)} + (B \times 75) + 100}{\text{wing area (m}^2\text{)}}$ where

B is the number of occupants of the machine.

C in the formula indicates points gained in the rally by the number of intermediate landings made and number of frontiers crossed on the way to Zurich. These points

are calculated from the formulæ: $50 \frac{e}{E}$ and $5 \frac{l}{L}$, where e

is the number of officially observed intermediate landings made by the competitor, and E the greatest number of landings made by any competitor, and f is the number of frontiers crossed, while l and L have the same significance as before. In addition to these points to be gained, 15 points were awarded for side-by-side seating, 10 points for enclosed cabins, and 25 points for side-by-side seating in an enclosed cabin.

Points were subtracted from N if competitors arrived before 5 p.m. or after 5.30 p.m.

The actual international contest included certain "technical tests" and a handicap speed test. In the "technical tests" a total of 100 points could be gained, the following being maxima: Spreading and folding the wings, 10; engine starting, 10; length of take-off and landing run, 30; climb test, 20; equipment, 30.

The handicap speed test, over a 600-km. (373 miles) course, was based on the formula:

$$\left(\frac{100 - \text{points in techn. tests}}{100} \right) \times \left[1 + \left(3 \frac{\text{h.p. per person} - 40}{100} \right)^2 \right]$$

The result was expressed in hours.

For Commercial Aircraft

The competition by commercial aircraft for the Chavez-Bider Cup was open to aircraft with a pay load of 200 kg. (440 lb.) and upwards, and took the form of a speed test over the circuit Zurich-Geneva-Milan-Zurich. The classification in this, as in the light plane contest, was according to a rather complicated formula, which read

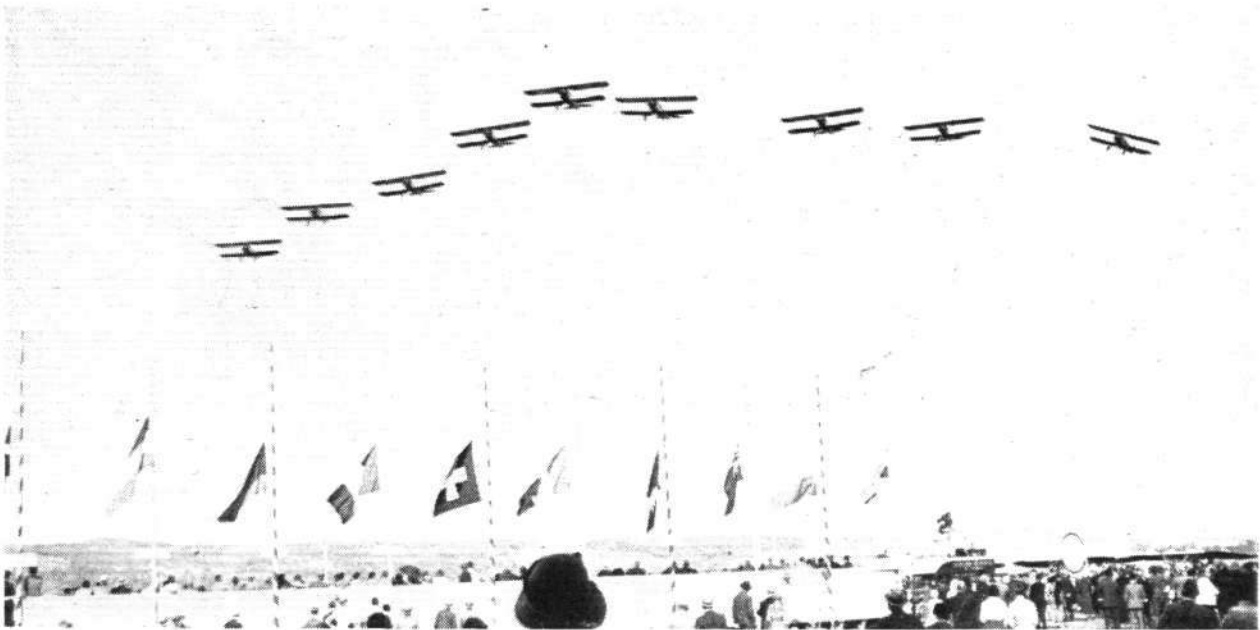
$\frac{VPC}{E}$, the winner being the machine scoring the highest figure. This formula related to single-engined machines.

For multi-engined machines the formula was $\frac{1}{2} M \frac{VPC}{E}$.

In this formula V = average speed over the course (in km.); P the smallest pay load transported between two stages (in kg.); E the weight in kg. of the fuel consumed on the circuit; and M the number of engines. C was a coefficient, with a maximum value of 80, calculated from an award of points for comfort, etc., construction, take-off and landing run, engine starting, and sale price.



SECOND IN THE SINGLE-SEATER CLASS : The Polish P.L.Z.11 (Bristol "Mercury 4") averaged 193 m.p.h.



EMOTIONING FLYING : An Italian Breda Squadron provided several thrills.

The Circuit of Zurich

This was an international speed contest over a 65-km. (40.4 miles) circuit, with start and finish at Zurich and turning points at the Bachtel and Eschenberg towers and the wireless mast at Kloten. The circuit had to be covered three times, giving a total distance of 121.2 miles.

Virtuosity

The "Concours international de virtuosité" was an aerobatics competition, and was divided into a civil and a military type class. In each class the exhibition consisted of a series of evolutions set by the judges, and to be carried out in the order asked and within the time period given by them. The second was a "free show," in which a competitor did what he liked, but keeping to a fixed and definite programme handed to the judges beforehand.

International Circuit of the Alps

This was the contest in which two British aircraft scored first places, as recorded last week. It was a speed race over a triangular circuit of 228 miles, and was open to military single-seaters and multi-seaters. The contest in the single-seater class was won by a Yugoslav Hawker "Fury" (Rolls-Royce "Kestrel") at a speed of 201 m.p.h. and in the multi-seater class by a Belgian Fairey "Fox" (also Rolls-Royce "Kestrel"), at an average speed of 160 m.p.h. When it is remembered that the course was so arranged that compulsory landings had to be made at the turning points, and that therefore each "leg" of the course meant climbing to anything from 10,000 to 13,000 ft., these speeds are remarkably fine, and indicated one of the reasons why modern British aircraft are so far ahead of any others.



AN ANGLO-DUTCH ALLIANCE : The Fokker D.XVI, fitted with Armstrong-Siddeley "Panther" engine.



THE ITALIAN MOUNT : The Breda 19 used by the Italian squadron for their aerobatics show.

Squadron Competition

The squadron evolutions competition was open to military aircraft of any nationality, a squadron to consist of five machines. Stunting was not permitted, and the evolutions had to be carried out within a square of not more than 3 km. (1.86 miles) side, and at a height not exceeding 500 m. (1,640 ft.). Each squadron was awarded an initial 2,000 points, and from this were deducted points for imperfections in the manœuvres or in the timing of the evolution, etc.

THE RESULTS

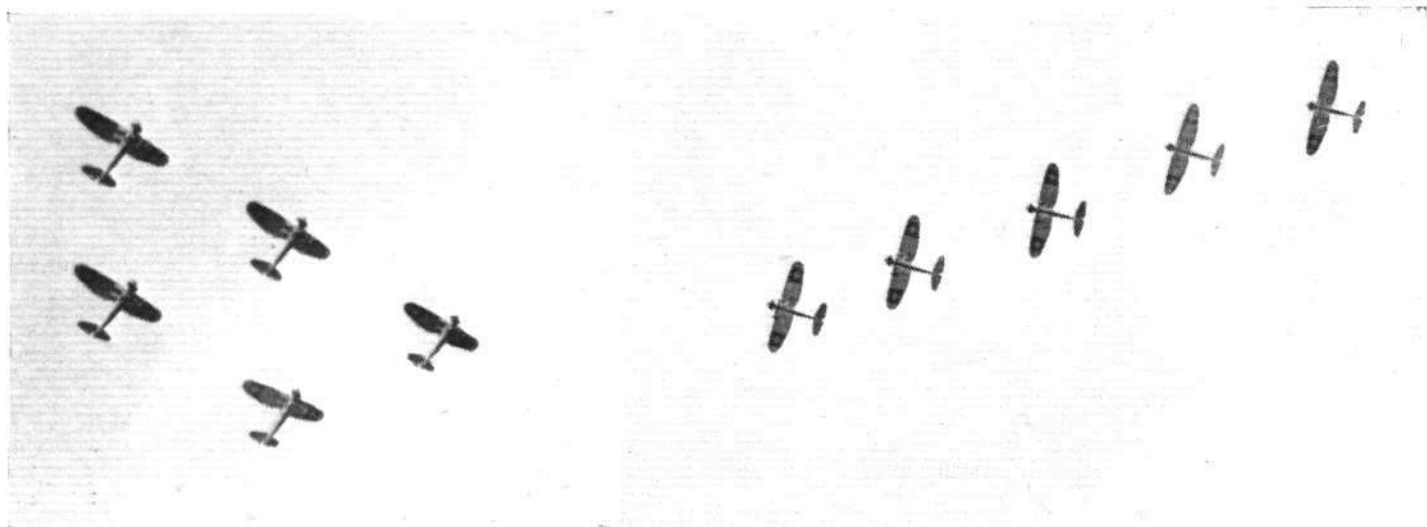
With the rules and regulations briefly explained above, our readers will be able to form a good idea of the nature and scope of the various contests which had been scheduled for the Zurich meeting. In the following we give the results in such detail as considerations of space permit.

The Rally.—Out of the 10 entries for the international rally, seven started, one gave up on the way, and six finished. First place was secured by Max Funk (Switzerland) on a "Klemm L.25" (Salmson), who, starting from Flushing, covered a distance of 818 miles at an average speed of 65 m.p.h. (stops included in flying time), made nine intermediate landings, and crossed six frontiers. He was awarded 936.43 points.

Second was J. Puget (France) on "Farman 234" (Salmson), who started from Lyons, made nine landings, crossed one frontier, and averaged 98 m.p.h. over a distance of 1,190 miles. Points, 793.4.

Third was Carl Soenning (Germany) on a "Klemm L.26" (Argus), with a distance (from Düsseldorf) of 770 miles, speed 64 m.p.h., six landings and five frontiers, 764.66 points.

The Light Plane Contest.—Out of the 10 entries for this, nine took part. First place went to Robert Fretz (Switzerland) on a de Havilland "Puss Moth" ("Gipsy III").



IN HOME AIRS: Swiss Dewoitines "forming" over Dübendorf.

Second and third places also went to Switzerland, the pilots Mauerhofer and Nauer both being mounted on "Puss Moths," and both, like the winner, carrying two passengers. All three used Shell Spirit, and, needless to say, K.L.G. plugs.

Circuit of the Alps (Commercial Aircraft).—Five machines had been entered for this contest, and three finished. They were a Junkers three-engined "Ju.52" (Hornet), a Dornier four-engined "Do.K" (Walter), and a Fokker three-engined "F.VII" (Wright). The "Ju.52" secured first place, the "Do.K" second, and the "F.VII" third.

International Speed Contest.—Of the 10 entries for this event, five started, but Mittelholzer gave up. First place went to Maj. Cassinelli (Italy) on "Cr.30" (700 Fiat) with a speed of 213 m.p.h. Lt. Scapinelli (Italy), on a similar machine, was second, with a speed of 209 m.p.h., and Nyffenegger (Switzerland) on a Lockheed "Orion" (Cyclone) third, with a speed of 205 m.p.h.

Civil Aerobatics.—All six entries took part in this contest, five of them being German and one (Victor Glardon) Swiss. The highest number of points (99) was scored by Gerhard Fieseler on his F.2 "Tiger" (360-h.p. Walter). Second was Dr. Gullman on a Raab-Katzenstein "Tiger-

schwalbe" (240 Walter), with 87 points, and third Gerd Achgelis on his Focke-Wulf "Kiebitz" (110 Siemens) with 84 points.

Military Aerobatics.—Sixteen entries had been received for this event, but many did not take part. First place went to Capt. Amouroux (France) on a "Morane" (230 Salmson), with 94 points. Second was Capt. Sandberg (Holland) on a Fokker "D.XVI" (Armstrong-Siddeley "Panther"), with 90 points, and third Capt. Frey (Switzerland) on Dewoitine "D.27" (500 Hispano).

Late entries by Italy, flown under the same conditions, covered six Breda 19 machines, and first place went to Tenente A. Zotti, with 76.3 points.

Squadron Evolutions.—This contest was fought between Denmark, France and Switzerland, and resulted in a tie between Denmark and Switzerland. The Danish squadron was mounted on Fokker "C.V.'s" ("Jupiter"), and was under the command of Capt. Laerum. The Swiss squadron was on Dewoitine "D.26's" (300 Wright), and was commanded by Capt. Koepke. Both were awarded 173 points. Second was Capt. Karnbach's squadron (Switzerland), also on Dewoitine "D.26's," with 167 points, and third Capt. Meyer's squadron (Switzerland) on Dewoitine "D.27's" (500 Hispano).



Italy and the League of Nations

THE Milan paper *Popolo d'Italia* on July 31 published an article by General Italo Balbo, the Air Minister, who is by many believed to be Signor Mussolini's right-hand man. The following summarised translation was sent to *The Times* by its Milan correspondent.

The article says all decisions taken by the League bear the "trade mark" of this dominating group. The United States indirectly, and France and Great Britain openly, control two-thirds of the delegates to the Assembly. The Disarmament Conference was "a perfect example" of this, and exaggerated precautions were taken by the three dominating Powers to control any "surprise acts of rebellion dictated by a rising of national sentiments."

Among the members of the Bureau, General Balbo continues, there was not an Italian, a German, a Russian, or "any delegate suspected of friendliness towards any independent Power." This organisation worked admirably for the whole six months of the conference, and Italy was unable to change in the slightest degree the pre-established positions.

General Balbo claims that while Italy began with a frank will to disarm, France, Great Britain, and the United States had no intention of disarming, or at the most desired only relative disarmament, such as would strengthen their individual positions and weaken those of the others. Before coming to the Conference Great Britain and the United States had increased their naval armaments in view of possible reductions, and France had strengthened her land armaments, so that the premise of the Conference was "an even madder race to arm."

Italy, the article continues, denied her support to the majority resolution at Geneva because, although it contained, for the moment, only a general principle, "the dominating Powers at Geneva use general principles and traps which tighten and tighten until the desired end is attained Once the general principle is accepted it is not easy to escape from its conditions." As for the proposed international system of civil aviation, General Balbo sees in it the ill-concealed wish of France to lay hands, through the League, on the aviation organisation of Germany.

Referring to what he terms "certain hypocritical formulas" about land and sea armaments, General Balbo says that every time one of the three great Powers wished particularly to conserve a certain type of armament, "a negative formula results and the watchword is 'let us pass it over.'" The contrary happens, the Italian Minister claims, "when it is a question of striking at Italy, Germany, Russia, or any of the minor Powers linked with them."

The article concludes: "But it is necessary to have the courage to be unpopular and hard, that courage of which for 10 years the policy of Signor Mussolini has given proof in the world. Only a strong and frank style can

make success sure The opposition of some 10 Powers to the Benesh resolution was promoted by Italy's attitude. The so-called high contracting Powers must take note of this precedent if they wish to keep alive that monstrous factory of delusions and traps for the ingenious which goes by the name of the Disarmament Conference. Otherwise Italy already knows the road to take: that of the door, and not only will she not be alone, but she will also cause an indispensable clearing of the wearisome air which hangs over the Lake of Jean-Jacques."

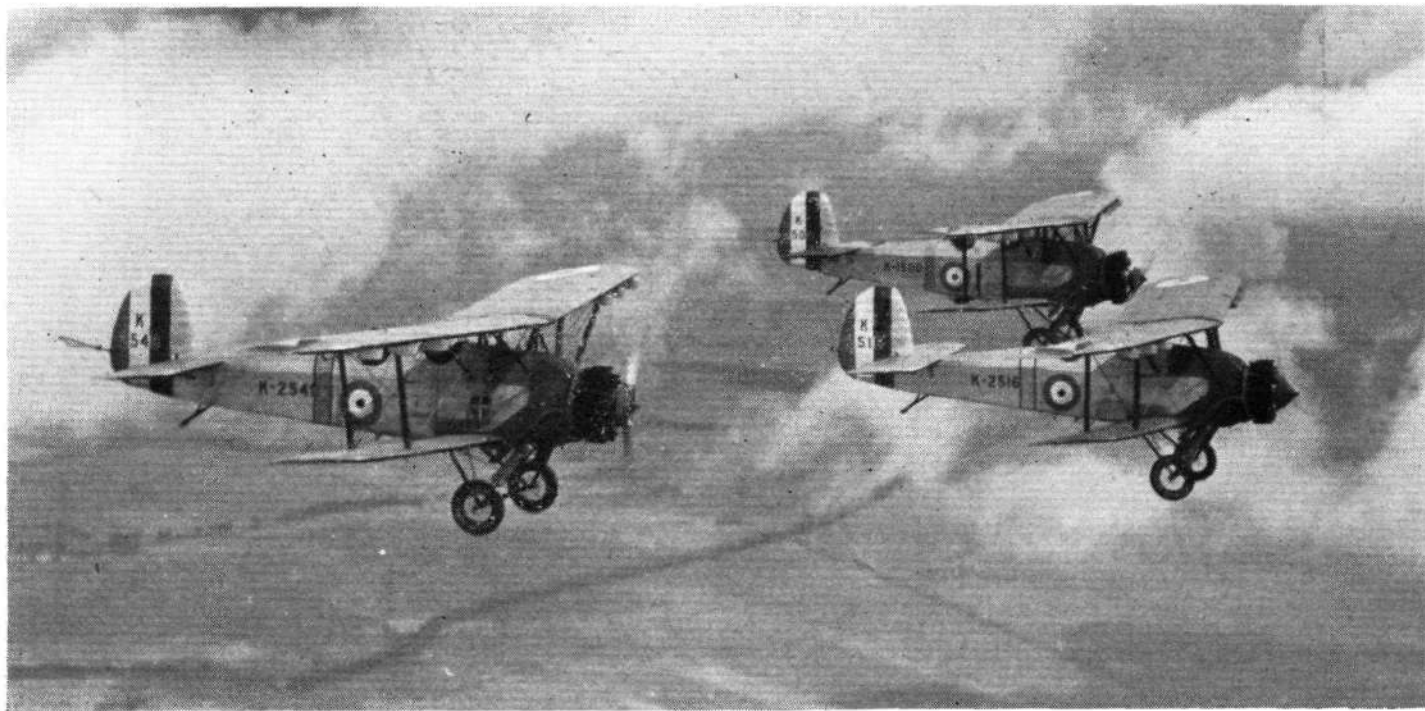
Another Mystery Crash

ANOTHER of those accidents, the cause of which is not fully explained, occurred on July 27. Mr. Bruce Bossom—the son of Mr. A. C. Bossom, M.P. for Maidstone—set out from Heston in a "Puss Moth," accompanied by his mother and Prince Otto Erbach. When over the Devil's Jump, Hindhead, at about 6 p.m., during a heavy thunderstorm, the machine crashed to the ground, having, it is stated, broken in mid-air. Parts of the machine and the three bodies were found in widely scattered parts of the ground. At the opening of the inquest, on July 29, Dr. Ealand stated that signs of what might be burns were found on the bodies of Mr. Bossom and Prince Otto, so that the possibility of the machine having been struck by lightning should not be ruled out as an explanation. The inquest was adjourned until September 14, pending the examination by Air Ministry experts.

S.B.A.C. Officers

THE following have been elected as Officers of the Society of British Aircraft Constructors, Ltd., for the year 1932-33:—Chairman, Sir John Siddeley, C.B.E. (Armstrong-Siddeley Motors, Ltd.). Deputy Chairman (Aircraft), Mr. H. Burroughes (Gloster Aircraft Co., Ltd.). Deputy Chairman (Engines), Mr. H. J. Thomas (Bristol Aeroplane Co., Ltd.). Hon. Treasurer, Mr. J. Lord (Saunders-Roe, Ltd.).

Cambridge University Air Squadron



OVER SALISBURY PLAIN: Armstrong-Whitworth "Atlases" of Cambridge University Air Squadron. (FLIGHT Photo.)

THIS year the Cambridge University Air Squadron went into camp at Netheravon for their annual attachment, instead of to Old Sarum, as in past years. Netheravon is a very large aerodrome, and Salisbury Plain is a very large place with quite a number of aerodromes spread about it, and forced-landing grounds galore. It therefore makes a very good training ground. Wing Com. F. P. Don, who lost an arm in the war, is still the chief instructor, and the instructor is Flt. Lt. E. C. Barlow.

Both University Squadrons have this year been equipped with the "Atlas" instead of the Bristol Fighter for advanced training. It is a machine of higher performance and requires an increased amount of proficiency on the part of the pilot. Members of the C.U.A.S. who earn their proficiency certificate on the "Atlas" will have reason to feel confidence in their powers. Preliminary flying training is still carried out in the Avro 504N ("Lynx"), though that may in due course be changed for the Avro "Tutor."

The strength of the squadron is fixed by the Air Ministry

at 75, and there is always a long waiting list of men who are only too keen to join. Many very good men have to be left out, and so it follows that those who are admitted as members are of the best that Cambridge can produce. The keenness of all on their work is the outstanding feature of the squadron, and the men are very easy to teach.

During term time the squadron receives ground instruction at the headquarters in Cambridge and flying instruction at Duxford Aerodrome. The Station Flight there serves their needs. During term time no member may fly solo unless he has qualified for a certificate. First solos always have to be done in camp. Three hours' solo and a fairly searching examination in ground subjects qualifies a man for a proficiency certificate, and that means an "A" licence. Thereafter a man may fly solo at Duxford in term time if he produces written permission from his parent or guardian. A number of the members are also officers in the Royal Air Force Reserve, and get flying practice during their reserve training as well as with the University Squadron. As Reserve officers they undertake certain



Members and Instructors of Cambridge University Air Squadron. (FLIGHT Photo.)



PREPARING FOR A "SITTER" : Camera Gun Instruction. (FLIGHT Photo.)

responsibilities for the defence of the country, but the University Squadron imposes no such obligations. The two squadrons are supported by the Air Ministry (at very moderate cost) in order to bring such desirable recruiting grounds into touch with the flying movement, and also to meet the needs of University candidates for regular commissions. The Universities are a regular channel for regular commissions in the R.A.F. as well as for the Army. Candidates for such commissions must have taken their degrees, and to compensate for the longer time which it takes to get a degree as compared with passing through Cranwell, an antedate is given to the officer from a University. If he takes Honours, a longer antedate is given. Presumably what the Services ask from the University officers is an intellectual qualification rather different from that which they may expect to get from the Service Colleges and Academy. To obtain this they have to offer some suitable inducement, which takes the valuable form of an antedate. The competition for places in the University squadrons is so keen that the Air Ministry shows signs of demanding high class Honours before it will consider a man for a commission. Naturally, certain men who are eminent in other ways, such as Blues, may receive special consideration, but there is no relaxation of the demand for a degree. Brainless brawn is not required in the Royal Air Force.

The Cambridge Squadron this year includes one rowing Blue and two members of the lawn tennis team, one of whom was captain of the team. The son of the Prime Minister of Iraq is also a member, and has already been granted a commission in the Flying Corps of the Iraq Army.

The flying hours during this last camp have been rather



WAITING THEIR TURN : Cambridge men in flying kit watch an instructor and pupil. (FLIGHT Photo.)

below those of last year, and there have been fewer and shorter cross-country flights. As the instructors and members are dealing with a new type of machine, some caution in these respects has probably been wise. The keenness of all remains, however, undiminished.



THE GOOD OLD AVROS : The training machines of C.U.A.S. (FLIGHT Photo.)

Private Flying & Gliding



A WINNER AT SKEGNESS: Lt. Col. L. A. Strange about to take off in the new "Spartan II" (Hermes II B).

SKEGNESS THE SECOND

THE second air pageant organised by the Skegness Aero Club took place on Sunday, July 31. About thirty machines were present, ranging in size from single-seater Comper "Swifts" to a twelve-passenger Ford "Trimotor." Demonstrations were given by the Ford (three Whirlwinds), by F/O. H. H. Leech in the Arrow "Active I" (Hermes IIB), by Mr. Marsh in an "Autogiro," and by Lt. Com. Geoffrey Rodd in his "Puss Moth."

The programme was on more or less conventional lines, and some excellent air racing was seen. Six machines took part in a handicap race over three laps of a ten-mile course:—Mr. Lipton and Mr. Henshaw—the first Skegness-trained owner-pilot—in two "Gipsy Moths," each with a handicap allowance of 5 min. 15 sec.; Lt. Col. Strange in the new "Spartan II," with inverted Hermes engine (4 min. 38 sec.); Miss Winifred Brown in her "Sports Avian" (3 min. 31 sec.); Capt. Neville Stack in a "Puss Moth" owned by Eastern Air Transport, operators of the Skegness Aero Club (2 min. 7 sec.); and Capt. A. J. Styran in the Banco's Gipsy-engined Comper

"Swift" (scratch). The race was won by the "Spartan," with the "Swift" second and the "Avian" third. Unfortunately, Miss Brown damaged the undercarriage of her machine on landing; but this was the only mishap in a successful meeting enjoyed by a large crowd.

The big race of the day was over a 120-mile course from Skegness to Tollerton aerodrome (Nottingham) and back. Mr. Dancy's handicapping provided a remarkably close finish to this race, which was also won by Lt. Col. Strange in the "Spartan." The first three machines arrived at the finishing post within three-quarters of a minute. The results were as follows:—

Aircraft	Engine	Pilot	Handicap Allowance	Position
Spartan I	Hermes II B	L. A. Strange	min. sec.	1
Puss Moth	Gipsy III	N. Stack	21 22	4
Active I	Hermes IIB	H. H. Leech	10 17	2
Comper Swift	Gipsy III	N. Comper	8 06	3
			0 00	

The "Swift" which Flt. Lt. Comper flew in this race was the identical machine which he built for the Prince

Local Race—3 laps. Total 27 miles

Reg'n Mk.	Aircraft	Engine	Pilot	Start	Finish	Net Time	Av V	Place
LN	Moth	Gipsy I	Henshaw	0m. 00s.	18 : 47	18 : 47	86	6th
AS	"	"	Lipton	0 : 00	17 : 33	17 : 33	92½	4th
TR	Spartan II	Hermes IIB	Strange..	0 : 37	16 : 45	16 : 08	100½	1st
ED	Sports Avian	Hermes II	Mrs. Brown	1 : 44	16 : 52	15 : 08	107	3rd
OF	Puss Moth	Gipsy III	Stack ..	3 : 08	17 : 53	14 : 45	109½	5th
WH	Swift	Gipsy III	Styran ..	5 : 15	16 : 48	11 : 33	140½	2nd



"GIPSY III's" AT SKEGNESS: On the left Lt. Com. Rodd's well-equipped "Puss Moth" and on the right Mr. Styran's "Swift."

of Wales and which gained second place in the King's Cup Race. On Saturday Comper flew it across England from Liverpool to Skegness—135 miles—in 49 min., probably a record for a flight across England.

One unusual event was a climb-and-dive race in which Mr. Lacayo's Pobjoy-engined "Swift," Lt. Com. G. Rodd's "Puss Moth," and Capt. A. J. Styran's Gipsy-engined "Swift" climbed to the level of a practically stationary "Autogiro," and then dived back to the aerodrome. Capt. Styran would have won this event easily if he had landed as soon as possible, but instead he flew round at a height of about 50 ft., and his "Swift" was the last of the three machines to touch terra firma.

The meeting closed with the presentation of prizes by Mrs. Carr Gregg, the wife of a local vicar, who has made several interesting flights as a passenger in Eastern Air Transport machines.

A.S.T. ACTIVITIES DURING JULY

During the last month six pupils, including Maj. Jusu, of the Finnish Air Force, the Vicomte de Sibour and Count Seilern, have completed the blind-flying course and qualified for the certificate. Capt. MacDonald, who is a Special Service Officer attached to the R.A.F. in Iraq, qualified for the "A" pilot's licence on the Avro "Tutor" and was awarded the School certificate for having obtained over 85 per cent. of the total marks for this course. In addition to a number of R.A.F. Reserve Officers there are now over 20 resident pupils at the School. Among them are Sir Alfred Beit, Bt., M.P., who is taking a course of advanced flying and blind flying; Maj. Vetch, the chief instructor of the Bombay Flying Club; and Mr. Bhagat Lal, an instructor of the Delhi Flying Club, who are taking the instructors' and blind flying course; and Lt. Rasananda, of the Siamese Air Force, who has returned to the School for further experience on Service-type aircraft, etc. Mr. Ngo Kok Tie, Messrs. Grant, Williams and Mehta are also under instruction in blind flying, and the remainder of the pupils are undergoing advanced training for their "B" pilots' licences and seaplane training. On July 28 the School was honoured by a visit from H.H. the Duke of Aosta, who made a detailed inspection of the School, and was particularly interested in the syllabus of training for blind flying and the special ground instructional apparatus used in connection with this course.

Every month there seems to be an increase in the personnel and equipment of A.S.T. at Hamble. An Avro "Trainer" (626), fitted for blind flying and wireless transmission and reception, has now been added to the establishment of aircraft, while Flt. Lt. J. B. Veal has joined the already numerous staff of first-class instructors. A.S.T. are very fortunate in obtaining the services of this officer, who served for several years on the staff of the C.F.S., and there took over the instrument flying course from Flt. Lt. Johnstone. On the other hand, Flt. Lt.

Veal is lucky to join an institution such as A.S.T., which has gained the reputation of affording such fine training to civilians in all branches of aviation.

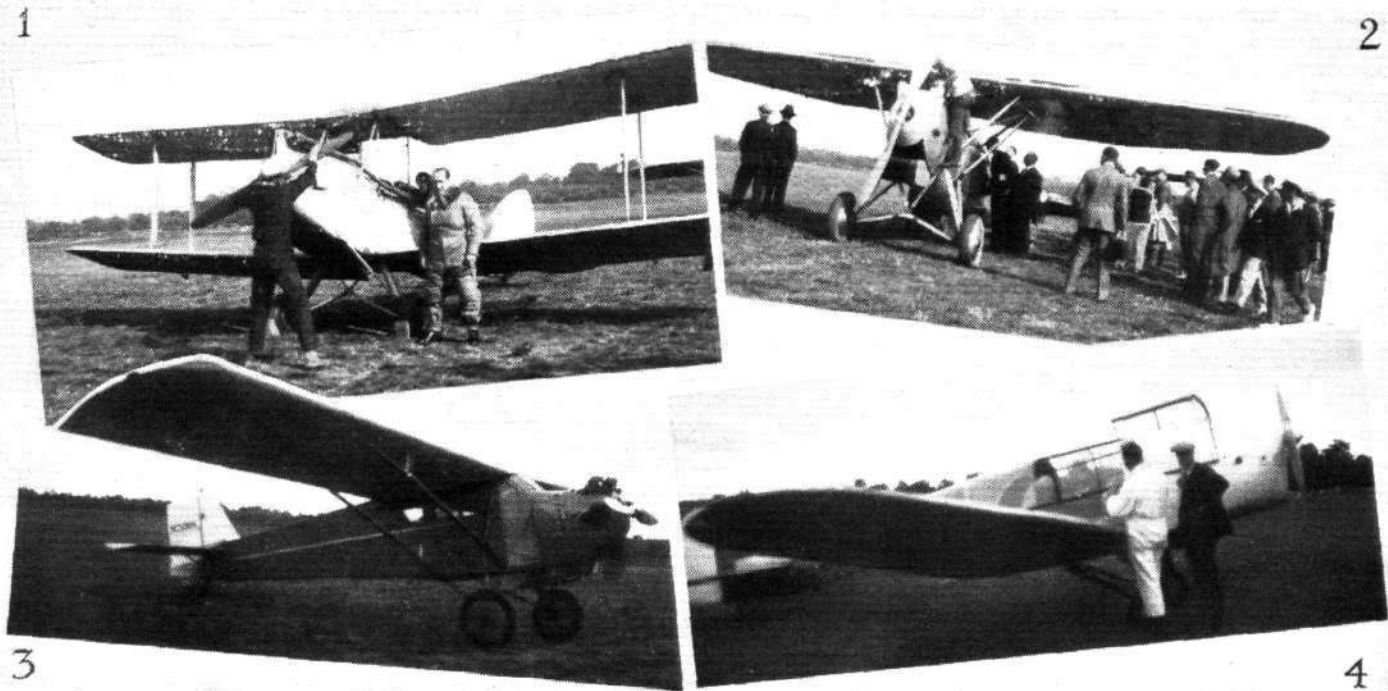
Those who have had the opportunity of reading the latest prospectus will be interested to hear that a further addition has been made to the already comprehensive course, No. 8, for commercial pilots. A complete course in wireless is now included to enable students to qualify for the Air Ministry's W/T. air operator's licence, and a specialist wireless instructor is joining direct from the staff of the Electrical and Wireless School of the R.A.F. at Cranwell. A fully-equipped W/T. ground station is in course of erection, in addition to which wireless apparatus for reception and transmission between air and ground will form part of the equipment. Pupils taking the complete course No. 8 will therefore be in possession of the following licences and certificates at the termination of their training:—"A" and "B" pilot's licences, blind flying certificate, "A" and "B" ground engineer's licences, "X" ground engineer's licences for compasses and parachutes, second-class navigator's certificate, and Air Ministry W/T. air operator's certificate.

THE DEAUVILLE MEETING

Known as *Les Journees Internationales de Deauville*, the annual rally and flying meeting was held at Deauville on July 23 and 24. Both the rally and the meeting were of a decidedly international character, and some 68 machines, a record number, took part in the rally, crossing the finishing line between 4 and 6 p.m., as required by the regulations. The machines arrived from all parts of France, and many from England, Belgium, Germany and Switzerland. The first to arrive was Froissart, in a Morane "Parasol" (120 Clerget), who checked in about 4 p.m., coming from Orly. Among English visitors may be mentioned H. C. Vaughan, S. C. Cantrill, and R. C. Preston in "Gipsy Moths," Ashwell Cooke in a "Cirrus Moth," H. C. D. Walter in a "Puss Moth," and L. Beardmore in a Junkers F.13 ("Jupiter"). George Seversky, the well-known music-hall singer, flew over from London in his "Gipsy Moth" to make his daily appearance at the Deauville Casino. Mr. Carberry also came over from London in his new "Klemm" ("Gipsy III"), which he has entered for the coming international touring competition. This machine has a cabin top with large glass windows in the side to retain the view, and is reported to be very fast (some 155 m.p.h.). Marcel Doret came up from Toulouse in a "Dewoitine" with Hispano engine, having flown the distance of 465 miles at an average speed of 143 m.p.h. The United States were represented by two machines, a Curtiss "Robin" (Curtiss "Challenger") belonging to Mr. Grey, formerly of the Lafayette Squadron, who had as passengers Capt. Griffen and Lt. Mattern, the two American pilots who recently made a forced landing in Russia during a world flight attempt. This machine was flown from Paris. The other American aeroplane was a Stinson "Junior"



DISTINGUISHED VISITORS TO A.S.T.: On July 28 three "Autogiros" flew from Hanworth to Hamble, carrying three distinguished Italian visitors, who are seen in this group, which includes, from left to right, Mr. Marsh (pilot), Señor de la Cierva, H.R.H. the Duke of Aosta, Commendatore Mameli, Italian Charge d'Affaires, Col. Bitossi, Italian Air Attaché, and Mr. Brie, chief pilot. (FLIGHT Photo.)



AT THE DEAUVILLE MEETING: 1. Mr. George Seversky, the singer, about to leave for London in his "Gipsy Moth." 2. Marcel Doret's "Dewoitine" (Hispano). 3. The Curtiss "Robin" (Curtiss "Challenger"), and 4. Mr. Carberry's new "Klemm" (Gipsy III).

(Lycoming engine) belonging to the Paris branch of the Vacuum Oil Co., and was piloted by Mr. Edward White. In the evening of Saturday, July 23, a gala was held at the Casino, at which some 60 prizes were awarded to competitors in the aerial rally. The actual meeting was held on Sunday, July 24. It opened with a series of manoeuvres performed by a squadron composed of four Caudron biplanes and a Morane "Parasol" monoplane, and led by Maurice Finat. A balloon-bursting competition followed, and Georges Carbonnel performed trapeze evolutions from a biplane circling the aerodrome. Herr Kronfeld, the Austrian glider pilot, was then towed aloft in one of his gliders, and in spite of unfavourable weather conditions he remained aloft for eight minutes, finally landing in front of the club-house. The German stunt pilot, Achgelis, gave a very impressive demonstration of upside-down flying about 50 ft. from the ground, and aerobatics were also performed by Marcel Doret, Fraulein Bach and Victor Glardon, the Swiss pilot. The meeting closed with a parachute jump by Miss Vivienne Elder from a height of about 900 ft. The weather was fine on the Saturday, but light rain fell during the latter part of Sunday.

R. C. W.

BROOKLANDS

It is a curious feature of these reports that they always seem to begin by commenting upon the weather, either in a spirit of mournful resignation, when it has been unduly bad, or in one of joyful incredulity on those rare occasions—such as the King's Cup meeting—when the sun does manage to shine at the right time. This interest in applied meteorology is due not so much to the Englishman's proverbial dependence on the weather as a topic of conversation as to the fact that flying in all its branches—and most especially flying instruction—depends very largely on the state of the heavens. This week we shall have to do it again, even at the risk of becoming monotonous. The particular species of unpleasantness with which we have been affected has consisted of bright but deceptive intervals sandwiched between showers of almost tropical ferocity. These conditions have naturally hampered instruction, but in spite of this the School has put in well over 30 hours in the first four days of the week, which says much for the enthusiasm of the pupils—especially as many of them are still in the early stages, when outside discomforts make a great deal of difference. During the week Mr. Mistingher has made his first solo—a highly successful one—after quite a creditably short period of instruction. One or two English airmen who have run across him in Vienna speak very highly indeed of his

kindness to them there, and we are glad to see him here among English airmen as a kind of return visit. He has become a very popular figure at Brooklands. During the week Mr. Mees, of Rotterdam, has joined the School and taken his first lessons, and Mr. Mhatre, an Indian, has also become a pupil. The School has now quite a cosmopolitan atmosphere, comprising pupils from Holland, Belgium, Germany and quite a colony from India. In addition inquiries have been received during the past week from places as far apart as Newfoundland, New Zealand, Switzerland, Germany and America—and, strangely enough, from members of each of the Services—Army, Navy, and Air Force! One of the advantages of having a number of foreign pupils is that it avoids the danger of their feeling friendless and isolated. Several times it has happened that a pupil has arrived and found a countryman already at the School. During the week an important innovation has been made at the School, which now offers special additional facilities for pupils. An expert lecturer has been engaged, who will give his whole time to ground instruction. The ground courses offered are now much more comprehensive than before. As always, pupils learning to fly here will be trained free of charge in the elements of Theory of Flight, Navigation, Meteorology and Ground Engineering. This preliminary course will also be available to outside students at a nominal fee. Complete courses in Advanced Navigation, Meteorology and Rigging, Engines and Theory of Flight—all up to "B" licence standard—are available at low rates, or a combined course of all three, providing complete training for "B" licence candidates, may be taken. In addition, special coaching in portions of subjects may be had at an hourly rate. All these courses are given not in classes, but by individual instruction, as this usually is much quicker and more satisfactory both for teacher and student. Lessons are also available for classes of the younger generation, and it is hoped that a number of parties from schools, etc., may avail themselves of this offer. A new system of marking the pupil's progress board has been devised, and executed in many coloured chalks by Mr. Barr. One hopes it will be efficient—it is certainly somewhat dazzling! The repairs department is working at full pressure, and has had several interesting jobs during the past week or so. Machines handled include the Duchess of Bedford's "Puss Moth," which came in for C. of A.

LONDON AEROPLANE CLUB

In order to cope with the varied and ever-increasing social life of the Club, the club-house and catering

arrangements have been placed in the care of Mrs. French, assisted by an entirely new staff. Those of the older members who will miss the familiar figure of "Ted" Benn going about his duties will, we feel sure, extend a hearty welcome to Mrs. French, and help her to maintain the Club traditions. Mrs. French has had considerable experience in her duties, as she was, until recently, manageress to one of the Australian Aero Clubs. A welcome innovation which was much appreciated by the members during last week-end was the serving of afternoon tea in the lounge and on the verandah. Members are invited to make as much use of these facilities as possible and to bring their friends. The aerodrome surroundings form a very pleasant contrast to the smoke of London. Despite the atrocious weather during the latter half of July, the Club aircraft compiled the very fair total of 318 hours. As this figure takes no account of the flying done by members on their own machines, this is a good "bag." Seven "A" licences were taken during the month and the last day produced a very nice first solo by Mr. H. Mallet de Roquefort.

FIRST S. AFRICAN AIR RALLY

On September 17 the Rand Airport, Germiston, will be the rallying point for aircraft of all types from all over the African Continent organised in connection with the First South African Motor Rally and Gymkhana, which will be taking place at the same time. The African Air Rally promises to be the biggest gathering of flying folk yet staged in that country. Those flying to Johannesburg will enter a novel "Arrivals" competition. Certain aerodromes about 200 miles from the Rand Airport will be designated "Control" aerodromes, and on arrival at any of these aerodromes pilots will be handed instructions regarding the course to fly to reach the Rand Airport under the competition rules. The pilot's instructions will be such that, if he adheres to them correctly, he should arrive at the Rand Airport at a certain time known as "zero" hour. The actual time of "zero" hour will be known only to the Rally Control Officer, and on the pilot taking off from his control aerodrome his watch will be placed in a sealed container and he will have to rely on good flying and good judgment to reach the Rand Airport on "zero" hour. A handsome prize is being awarded for the pilot whose wheels touch the Rand Airport landing surface nearest to "zero" hour. Any pilot may enter any machine from any aerodrome, and a passenger may be carried if desired. After the competing machines have landed, they will be refuelled and a grand fly-past over the Motor Rally in the Show Grounds will take place. This will probably be headed by a flight from the South African Air Force. During the evening a special "flying folk" dinner and dance will be held. All visiting pilots will be the guests of the organisation during their stay. On the following day a gigantic display will be given at the Rand Airport by all visiting aircraft. Special competitions have been arranged, which include an aerial obstacle race, big-game shooting, parachute descents and a score of novel turns. The Rally is being organised by a Committee of flying personalities well known throughout South Africa, and is being enthusiastically supported by all the Flying Clubs, aircraft organisations, aviation departments of the A.A., the united Press of South Africa, and all interested in flying. There is a possibility that two machines may enter from England, one being flown out and the other shipped. All pilots, owners of aircraft

and others interested should write to the Rally Control Officer, Rand Airport, P.O. Box 365, Germiston, for conditions of entry, etc.

THE MONTH AT YEADON

Fourteen new members joined the Yorkshire Club in July, and flying hours nearly reached 150, Sunday, 10th, producing 13 hr. Weather, as elsewhere, has not been of the best, thunderstorms, rain and the poorest of visibility co-operating to keep pupils on the ground. On Saturday, 23rd, Mr. I. A. D. Maclean flew to Ryde, I.O.W., in 2½ hr. He was compelled by the weather to stay there till Wednesday and his flying time back to Yeadon was 4¼ hr. Large numbers of joyriders have been carried as the result of "free flight" schemes elaborated by some of the more enterprising Yorkshire tradesmen. One "house" has booked 300 flights for its customers. On Sunday, 24th, the Club was "At Home." This party produced nine new members and was very well patronised. Among aerial visitors during the month were the Marquess of Clydesdale, Mr. Edgar Hart, who came over to judge the semi-final of the competition for his trophy, four machines from Woodford, Mr. Diamint in the Dominion "Puss Moth" and Mr. C. Ashton in an Autogiro. The Lancashire Club defeated Yorkshire in the Hart Trophy by one point (75-74). That the move to Yeadon, undertaken last year, was justified is shown by the list of new members who joined during July—Bradford, Ilkley, Skipton, Huddersfield, Leeds, Bingley, Huby, Northallerton and Rawdon all being represented.

HANWORTH NOTES

Monday of last week was again a very gusty day, and little flying was done. Mr. Fred Darling had air-taxi trips on Tuesday and Friday to Beckhampton and Goodwood, his pilot on both occasions being Flt. Lt. M. H. Findlay. On Wednesday Mr. Coupland piloted Mr. Stephenson on a taxi trip to Waddington, and, in spite of very bad weather, night flying was carried out at Hanworth with the new floodlighting until about midnight. The following day Capt. Wilson did an air-taxi trip to Martlesham, and on Friday another to Berck, returning the same evening. On Saturday there was a distinct improvement in the weather, with the result that the club became very busy with pupil flying and three new members carried out their first dual lessons. The weather was very bad indeed for instruction purposes throughout the week, and Mrs. Macalpine was the only pupil to take an "A" licence. On Thursday three Autogiros went to Hamble carrying the Duke of Aosta and his staff on a visit of inspection to A.S.T., the pilots being Messrs. R. A. C. Brie and H. Marsh and Señor de la Cierva.

IRISH AERO CLUB

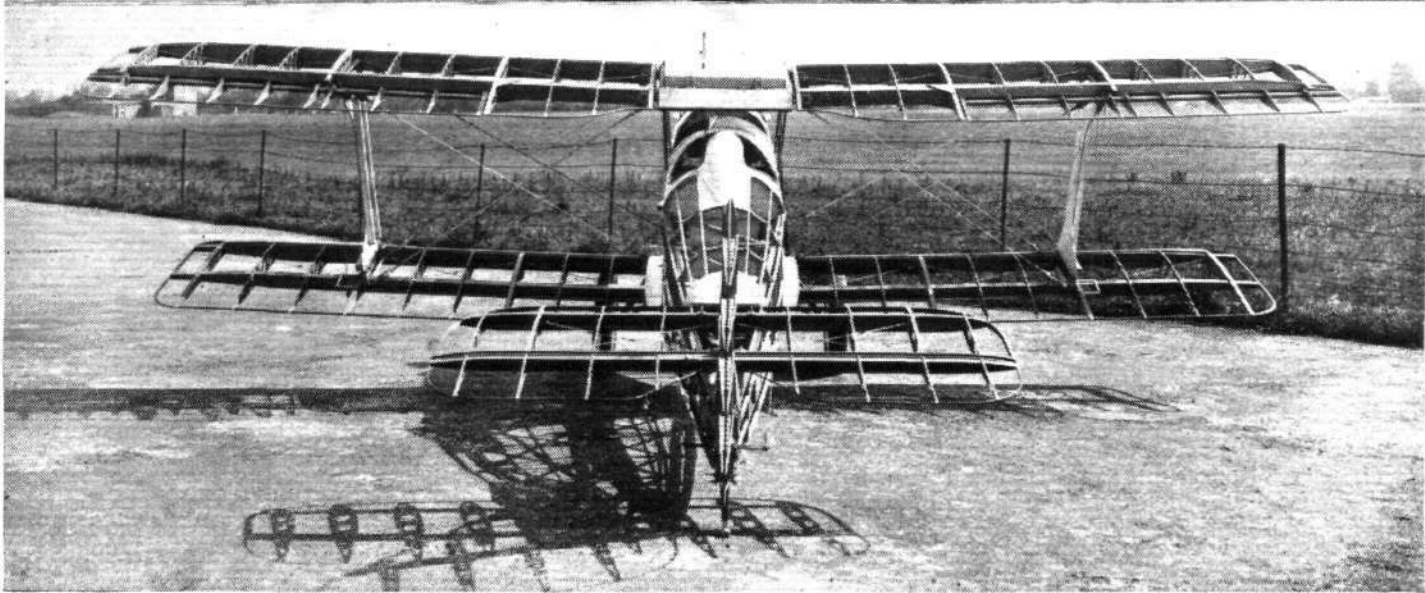
It is understood that plans are under discussion for reduced rates for flying instruction during the mornings of weekdays at the Irish Aero Club headquarters at Baldonnel. It has been found that few, if any, members appear at the aerodrome for instruction before 4 o'clock in the afternoons from Monday until Friday, and it is believed by some members that the lower rates could be advantageously introduced and help to reduce overhead charges.

The club will hold its first aerial picnic at Athy, County Kildare, on Sunday, August 14. A suitable field has been licensed and it is proposed to fly as many members down as wish, others proceeding by road.



HEAVY TRANSPORT AT SKEGNESS: The three-engined Ford, piloted by Maj. F. Digby.

THE MILES "SATYR"



DESIGNED by Mr. F. G. Miles and built for him by George Parnall & Co. at the works at Yate, Glos, the Miles "Satyr" is a little single-seater biplane of orthodox design and construction. With its small dimensions, low weight and small moments of inertia, it should be a really "snappy" little machine, very suitable for aerobatics, etc., and with a performance high enough to suit most people.

The "Satyr," which is shown in skeleton in the photographs above, has been finished since the photographs were taken, and is now only awaiting better weather conditions for its preliminary flight tests. In fact, it is probable that by the time this week's issue of FLIGHT reaches our readers, the machine will have been flown.

The Pobjoy "R" engine should give ample power for

any conceivable manœuvre, and as this engine has by now firmly established its reputation for reliability, the "Satyr" should suit the private owner who desires a machine which is easily capable of getting out of very small fields. As the wing loading is only about 7 lb./sq. ft., the rate of climb should be good, and the angle of climb such that obstacles can be surmounted with a very small horizontal run.

The main data of the "Satyr" are as follow: Length o.a., 18 ft. (5.5 m.); wing span (upper), 21 ft. (6.4 m.); wing chord (upper), 3 ft. 6 in. (1.067 m.); wing span (lower), 19 ft. (5.8 m.); wing chord (lower), 3 ft. (0.915 m.); wing area, 117 sq. ft. 10.86m²). The loaded weight is expected to be about 850 lb. (386 kg.).

Air Transport

The Bleriot Transatlantic Seaplane

THE Bleriot Co. are building a large seaplane at their shops at Suresnes (Paris Suburb), intended for transatlantic operation. It has a wing span of 141 ft. (43 metres), will be equipped with four Hispano-Suiza 650-h.p. water-cooled engines, and will weigh some 22 tons, when loaded ready for flight. The plans have been prepared by Philip Zapata, the engineer who also designed the Bleriot 110, the plane with which Bossoutrot and Rossi recently established a new world's long-distance continuous flight closed circuit record.

This new seaplane has been ordered by the French Government, and is intended for operation on the South Atlantic section, Dakar to Natal, of the Aeropostale France-South American air mail route. This ocean crossing is some 3,000 kilometres (nearly 2,000 miles) in length and is now operated by fast light steamers, which cover the distance in about 100 hours (four days). It is expected that this Bleriot-Zapata seaplane will have a cruising speed of about 170 to 180 km./hr. (106 to 112 m./hr.) and thus should make the crossing in about 20 hr. A saving of at least three days will thus be effected in the schedule of this air mail route, which now takes 8 to 9 days to cover the distance between Toulouse, France and Buenos Aires.

This new machine, which is rapidly nearing completion, is a high-wing monoplane equipped with a strong seagoing hull and with lateral pontoons or floats. The hull is constructed of duralumin plates, the maximum thickness of which is $2\frac{1}{2}$ millimetres, while the keel has two steps to facilitate the taking off. The pontoons also have steps.

Mounted above the centre of the hull is a rectangular super-structure, 13 ft. (4 metres) long, 4 ft. (1.20 m.) wide, and of a height of about 8 ft. (2.50 m.). It will contain the quarters for the crew and radio installation, the pilot being installed in the front part of it and thus having excellent visibility.

The wings comprise a centre section, forming part of the top superstructure, and to which the main wings are joined. They are braced to the hull by two steel struts mounted on each side of the super-structure at an angle of 45 deg. The construction consists of two main wing spars, with the usual interior bracing. The wings have a rectangular plan-form for about half their length and then taper off elliptically towards their ends. Their thickness varies from one to about three feet. They are covered with fabric and mounted at a dihedral angle of 1.30 deg.

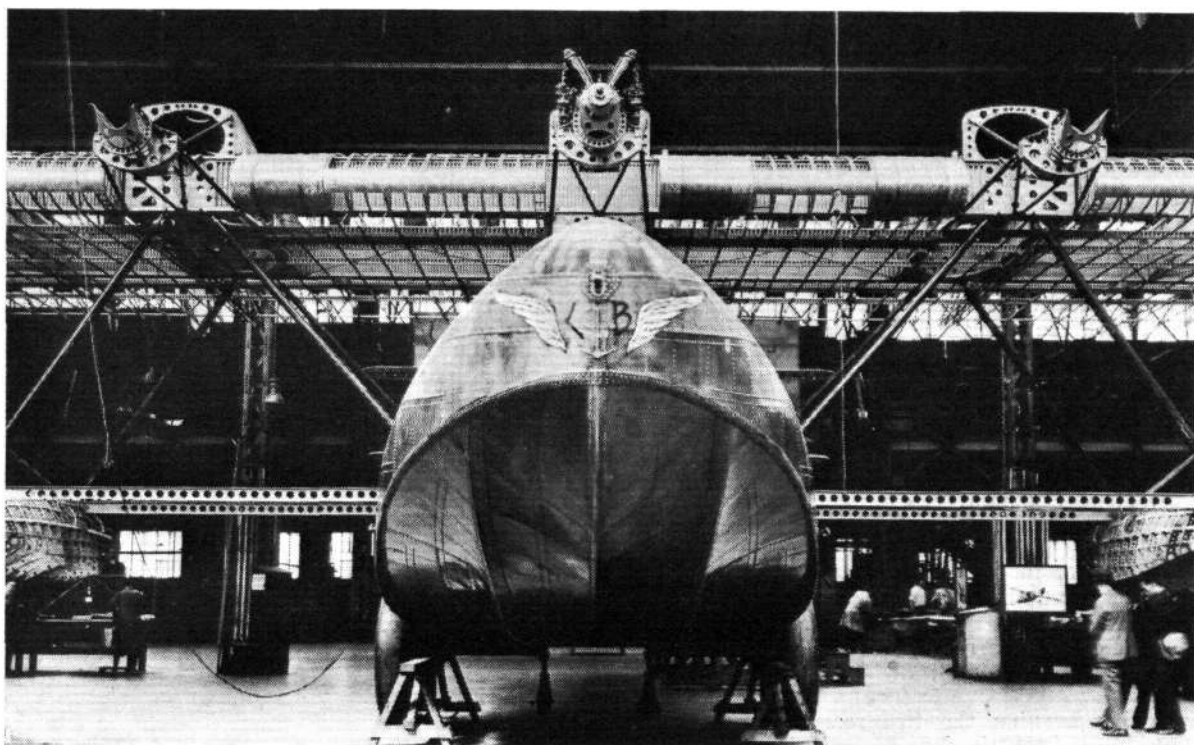
The pontoons have a volume of 3 cu. m. (106 cu. ft.) each. They are held in position by four struts braced to the wing above them and mounted in pairs at 90 deg. to each other. The pontoons are further braced by two light beams securing them to the hull.

The seaplane will be equipped with four 650-h.p. Hispano-Suiza water-cooled engines (of the type used by Dieudonne Costes in his 1930 transatlantic flight) fitted with reduction gears. Two of these engines will be mounted in tandem, the one on the leading edge and the other on the trailing edge of the centre section of the wings and directly over the superstructure. The two other engines will be mounted in the leading edge of the wings on each side of the centre motor, at the points where the wing and pontoon struts meet. Owing to the thickness of the wings it will be possible to carry out repairs to the engines during flight. The fuel tanks, installed in the hull, are 16 in number, with a capacity of 750 litres (165 gallons) each, making a total fuel supply of 11,000 litres (2,425 gallons).

Transporting a commercial load of 600 kg. (1,323 lb.), this machine will thus have a flight radius of 5,000 km. (3,107 miles) under the conditions of no wind prevailing. With a headwind of 50 km./hr. (31 m./hr.) prevailing, this plane should have a flight radius of 3,200 km. (nearly 2,000 miles). It is expected that the machine will take



The Type 5190 Bleriot Seaplane for Transatlantic Service. It is fitted with four 650-h.p. Hispano-Suiza engines—only one of which is shown in place in the illustration.



A front view of new Bleriot Seaplane type 5190 now rapidly nearing completion.

off and fly on three motors and maintain its altitude on two engines.

The crew will consist of four men, a commander, two pilots and a mechanic. A temporary landing gear has been fitted to the machine to facilitate its handling before it leaves the shops. It is expected that it will be completed and turned over to the Government at the end of this year.

The main characteristics of this seaplane are: Wing span, 43 metres (141 ft.). Height, 6.9 m. (22 ft. 7 in.).

Length, 26 m. (85 ft. 4 in.). Width of hull, 3.64 m. (12 ft.). Wing surface, 222 sq. m. (2,388 sq. ft.). Nominal power of engines, 2,600 h.p. Maximum power of engines, 3,000 h.p. Weight of plane (empty), 11,200 kg. (24,696 lb.). Weight of plane (loaded), 22,000 kg. (48,500 lb.). Maximum speed, 220 km./hr. (136.7 m./hr.). Cruising speed, 175 km./hr. (109 m./hr.). Flight radius (no wind prevailing), 5,000 km. (3,107 miles). Flight radius (head wind 50 km./hr. prevailing), 3,200 km. (2,000 miles). R. C. W.

Air Mail Postcards—New Reduced Rate

AN important innovation in air mails is announced by the Post Office. Starting on Monday, August 8, a special rate for postcards carried by air will come into effect. The list of charges is a long one, and we hope to publish it in full in an early issue. The most interesting items are as follow. The rate to most European countries is 2½d., to the East African colonies 3d., to South Africa direct 5d. and by internal air mail 2d., to Karachi 3d., to Delhi 4d., to Australia by air to Karachi and thence by ordinary route 3d., by air to Karachi and by air in Australia 4d., to Egypt 2d., to Iraq 3d., to Palestine 2d., to Rhodesia 4d., to the Sudan 3d., and to Malaya 6d.

K.L.M. Extending to Ireland ?

AT a special meeting of the Galway Harbour Board last week the Harbour Commissioners met a deputation from Iona National Airways, Ltd., Dublin, who are stated to be acting in conjunction with Royal Dutch Air Lines, to discuss the provision of landing facilities at Galway for an air service to London and the Continent. A representative of Iona Airways said that he and other members of the company had landed at Oranmore Aerodrome and their proposition was that if a suitable landing ground was offered by the Commissioners the company would institute an air service to carry passengers, luggage and mails. Mr. O. E. Armstrong (chief pilot of the company) said "It was up to the municipal authorities to provide the landing places as had been done in England and other countries." After some discussion the Commissioners unanimously approved the project and promised to give it their immediate and sympathetic consideration. Mr. Hugh Cahill, managing director of Iona National Airways, Ltd., left shortly afterwards for Amsterdam to discuss the matter with the principals of Royal Dutch Air Lines.

Graf Zeppelin Mails

THE Postmaster-General announces that the air service by the airship *Graf Zeppelin* from Germany to South America will again be available for specially subscribed correspondence from this country at the same charges as those for the existing air service, namely:—To Brazil:

Letters and postcards, 3s. 6d. per ½ oz.; printed papers, samples, etc., 10d. per ½ oz. To Argentine, Bolivia, Chile, Paraguay, Uruguay: Letters and postcards, 4s. per ½ oz.; printed papers, samples, etc., 1s. per ½ oz. Correspondence intended for despatch by this route should bear, in addition to the blue air mail label, the inscription "By *Graf Zeppelin*." The latest time of posting in the air mail box at the General Post Office, King Edward Street, London, E.C.1, will be 8 p.m. on Saturdays, August 13 and 27 and September 10 and 24, and correspondingly earlier elsewhere. The mails will be due to reach Rio de Janeiro, Monte Video and Buenos Aires on Friday, six days after posting, and Arica and La Paz on Saturday or Sunday, seven or eight days after posting. The *Graf Zeppelin* will make an additional flight in October; the latest time of posting for this flight will be announced later.

Swedish Aerotransport Co.

THE Swedish Aerotransport Company, which together with the Dutch and Danish companies Koninklijke Luchtvaart Mattschappij and Det danske Luftfartsselskab runs the Scandinavian Air Express routes from Malmoe to the Continent and Great Britain, a few days ago took on board its 100,000th passenger at the Kastrup airport near Copenhagen. This passenger, a Danish nobleman, when boarding the aeroplane, was presented with a silver cup by the technical director of the company, Karl Lignell. The Aerotransport started traffic on its first line eight years ago and since has flown regularly without the slightest hurt to any of its one hundred thousand passengers carried. The rapid growth of aerial traffic is strikingly illustrated by the development of the Swedish air lines. During the entire first season of 1924 the company carried only 374 passengers, whereas now the monthly number carried by the Scandinavian Air Express considerably exceeds this figure. Eight years ago the trip from Malmoe to Paris or London required 11 hours, but has now been reduced to 7 hours. The aeroplanes of the company have now covered a total stretch of three million kilometres by air, or about 72 times the distance round the earth along the equator.

Airport News

CROYDON

JUDGING by the amount of traffic, and the number of passengers passing through here during the holiday week-end, it seems obvious all records for air travel will be broken. The normal services in some cases had to be quadruplicated, in addition to the extra services put on for the holiday. The most popular route has, of course, been to Paris, but all others have had their full share of passengers.

A very interesting French machine paid us a visit during the week. It was a Couzinet, fitted with three Salmson engines. M. Rene Couzinet, the designer, was on board. It is a low-wing cantilever monoplane, with the two wing engines faired into the leading edge of the wing, the third engine is, of course, in the nose. The whole machine is most beautifully streamlined, nothing being left likely to cause head resistance.

The Governor of Malta arrived on Tuesday evening, after a hurried journey from Malta, owing to the illness of a relative.

On Wednesday evening the two recent Atlantic fliers, who crashed in Russia, arrived as passengers.

Mr. G. P. Olley, of Imperial Airways, had a hectic day on Saturday with the Westland. He left in the morning for Maidstone, picked up a passenger, cleared Customs

at Lympne and proceeded to Paris. He remained there just long enough for the machine to be refuelled and then returned to Croydon. Refuelling again, he left for Cherbourg with mails, returning later in the evening to Croydon. I doubt whether any pilot is more suited to these special rush jobs than Mr. Olley, and he always sees them through.

The joy-riding firms had things all their own way over the week-end. Imperial Airways being unable to cater for their usual week-end parties, every available machine being required for service.

One, Luft Hansa Junkers, left on Saturday morning direct for Berlin with 15 passengers. This machine was extra to the normal service. The journey was made non-stop in just over five hours.

Sabena Air Lines had four machines out on Saturday afternoon instead of the usual two, and every one was full.

Mr. Schofield is away in Paris with the Monospar.

The "Puss Moth," belonging to H.R.H. the Prince of Wales, was here on Friday, piloted by Flt. Lt. Fielden, and underwent wireless tests in preparation for the Prince's flight to France to unveil the Thiepval Memorial.

Traffic figures for the week:—Passengers, 3,239; freight, 81 tons. P. B.

FROM HESTON

MONDAY, July 25.—Weather conditions made it almost impossible for flying, and of 11 machines abroad attempting to return to Heston, only two were successful—the Comper "Swift" of Banco, which arrived from Paris, and Flt. Lt. Armour with three passengers in the Segrave "Meteor," G-AAXP, from Berck.

Tuesday.—Flt. Lt. C. Clarkson, manager of Selfridge Aviation Department, returned to Heston to-day after his trip to Zurich in Comper "Swift" G-ABPE. He stated that on the trip Paris-Dijon and Dijon-Zurich his average flying speed was 126 miles per hour and the average flying speed for the 1,220 miles which he covered during the whole trip was 112 miles per hour. In spite of the bumpy and unpleasant weather, the School had several pupils under instruction, one of whom was Miss Priscilla Scott Ellis, the young daughter of Lady Howard de Walden, while Miss Gonda Van Raalte—in town for the day—did one hour's solo on G-AAVY, the "family" machine of Lady Howard de Walden. Mr. A. B. Gibbons was off at 8.55 a.m. for Brussels with one passenger in his Pobjoy "Klemm"; the Hon. Leo Russell, at 9 a.m., in his "Moth" G-AARI for Paris; also Mr. M. Jackman for Paris in Mr. Gordon Selfridge's machine, at 9.15 a.m. Nine machines started off from abroad for Heston, but only four arrived, the remainder landing at various places owing to weather.

Wednesday.—Brig.-Gen. A. C. Lewin cleared Customs at 8 a.m. and set off for Ireland, but, owing to bad weather, returned after reaching Cardiff. Flt. Lt. Hattersley, with two passengers, in a "Puss Moth," cleared Customs and proceeded to Paris, en route for Cannes. Capt. M. Diamont, in the Dominion Spirit Co.'s "Puss Moth," cleared Customs for Brussels; Mr. M. Jackman returned from Paris after flying there to keep a luncheon appointment. Mr. Wood, chief pilot to Hillman's Airways, left in a "Puss Moth" with two passengers for Berck, returning later in the afternoon. EI-AAP, piloted by Mr. Armstrong, with Lord de Ramsey as passenger, arrived from Ireland. Miss V. B. Thompson qualified for her pilot's "A" licence.

Thursday.—Sir Alan Cobham's National Aviation Day was held at Heston to-day, in consequence of which the School had to cease instruction at noon. Coun. H. J. Nias, M.B.E., J.P., the Charter Mayor of Heston and Isleworth, entertained 80 Civil representatives of various London Boroughs to luncheon in the Airport restaurant, afterwards viewing his "Borough to be" from the air.

Among other visitors were the Rt. Hon. Herbert Morrison, J.P. (Minister of Transport in the last Labour Government), Mr. Raymond Unwin (President of the Royal Institute of British Architects), and the President of the Institute of Town Planning. A party of town-planning experts were taken for a flight over the outlying parts of London so that they might study the lay-out from the air.

Friday.—Messrs. Henlys, Ltd., sold G-ABUB (Gipsy II) to Sir Alan Cobham. Five private owners cleared Customs and left for Brussels on their way to a meeting at Chateau d'Ardennes; one went to Ostend and two to Berck. Mr. O. J. Tapper, of the "A.A." Aviation Department, left Heston with his bride on a flying honeymoon, their first stop being Paris. Heston is becoming quite a centre for the commencement of flying honeymoons.

Saturday.—Mr. Guy Hansiz cleared Customs and left for Brussels in OO-GUY, a new "Gipsy III Moth," of which he had just taken delivery at Stag Lane. Lord Willoughby de Broke left for a Continental tour, accompanied by his mother, in his "Puss Moth." Mr. Loel Guinness, with Mrs. Guinness as passenger, arrived from Cannes in a "Puss Moth." He accomplished the journey in six hours, his flying time from Lyons to Heston being 4½ hr. Col. Smith Barry arrived from Brussels. In addition to the above, the following Customs clearances took place:—Two to Brussels, one to Amsterdam, and one to Berck. The Junkers machine of Personal Flying Services, Ltd., piloted by Capt. W. Ledlie, left for Berck with four passengers. A party from the Isleworth branch of the Primrose League visited the Airport to-day and showed much enthusiasm in the organisation and their experiences in the air, most of them taking joy flights.

Sunday.—The day opened with bad visibility and drizzle rain, causing many cancellations of flying appointments. However, Dr. H. Gregory managed to qualify for his "A" licence, and afterwards went a cross-country flight with Capt. Ferguson to try out his navigation teachings in real bad weather. Capt. Francis Francis arrived from Berck in his "Sikorsky," accompanied by Mrs. Francis and her mother, Mrs. Jarman. Capt. W. Ledlie, of Personal Flying Services, Ltd., arrived from Berck in a Junkers, leaving later for Arras. Mr. Gibbons set off in a "Klemm" for Ostend. During the afternoon the weather improved considerably, and the School machines were in demand both for instruction and joy rides.

According to present arrangements, the Hon. Mrs. Victor Bruce will demonstrate the system of refuelling during her endurance flight at Heston on Sunday, August 14.

Airisms from the Four Winds

Our Flying Prince

On July 27 the Prince of Wales flew from Sunningdale to Haldon Aerodrome, Teignmouth, whence he motored to Brixham to christen the new Torbay motor lifeboat *George Shee*. On July 31 the Prince flew to Berck aerodrome for the unveiling of the Theipval Memorial on August 1, after which he flew home to Sunningdale.

The Arras Memorial

LORD TRENCHARD on July 31 unveiled the Arras War Memorial which contains a special memorial to the missing of the flying services.

Mrs. Bruce Makes False Start

THE HON. MRS. VICTOR BRUCE, with her husband and Mr. J. B. W. Pugh as co-pilots, took off from the Solent in the *Saro "Windhover"* (three "Gipsy II") *City of Portsmouth* on August 1 for an attempt to remain aloft for a month, as previously described in *FLIGHT*. After two hours' flying, however, she was forced to descend owing—according to a message dropped on the aerodrome—to water having got into the high-tension generator and causing a short circuit. It was found, also, that other adjustments would have to be made. These having been attended to it was the intention to make a second attempt at the earliest opportunity. A certain amount of misunderstanding would appear to have arisen over the fuel being used by Mrs. Victor Bruce. In point of fact this is "Regent Super" spirit identical in every way with that which may be obtained from all "Regent Super" pumps at garages. This is the No. 1 spirit sold by Trinidad Leaseholds, Ltd., whereas "Regent" is their second grade, more suitable for commercial vehicles. It is well worth noting the fact that all brands of "Regent" spirit are entirely British, refined from petroleum produced within the British Empire.

Mr. and Mrs. J. A. Mollison

Miss AMY JOHNSON and Mr. J. A. Mollison were married at the Church of St. George, Hanover Square, on July 29, Lt. Col. F. C. Shelmerdine, Director of Civil Aviation, acting as best man, and Kathleen Countess of Drogheda giving the bride away. Miss Johnson's parents and sisters arrived at the church too late for the ceremony. Among the guests at the reception at Grosvenor House were Sir Alan and Lady Cobham. On July 30 the bride and bridegroom started on their honeymoon from Stag Lane, Mrs. Mollison flying the D.H. "Moth" flown by Capt. Broad in the King's Cup race and Mr. Mollison a "Puss Moth." They flew to Renfrew, whence they proceeded to Kilburne Castle, Fairlie, where they will be the guests of Lady Bowden.

Prof. Piccard's Balloon Ascent

PROF. PICCARD left Brussels on August 1 by road for Zurich, where he will make final preparations for an attempt to beat his previous record of an ascent of about

ten miles. He was accompanied by M. Cosyns—who will be his companion on the attempt—and with them was a lorry transporting his new "Stratospheric" balloon. He proposes to make the ascent from the neighbourhood of Zurich on the first suitable occasion.

Herr von Gronau in Canada

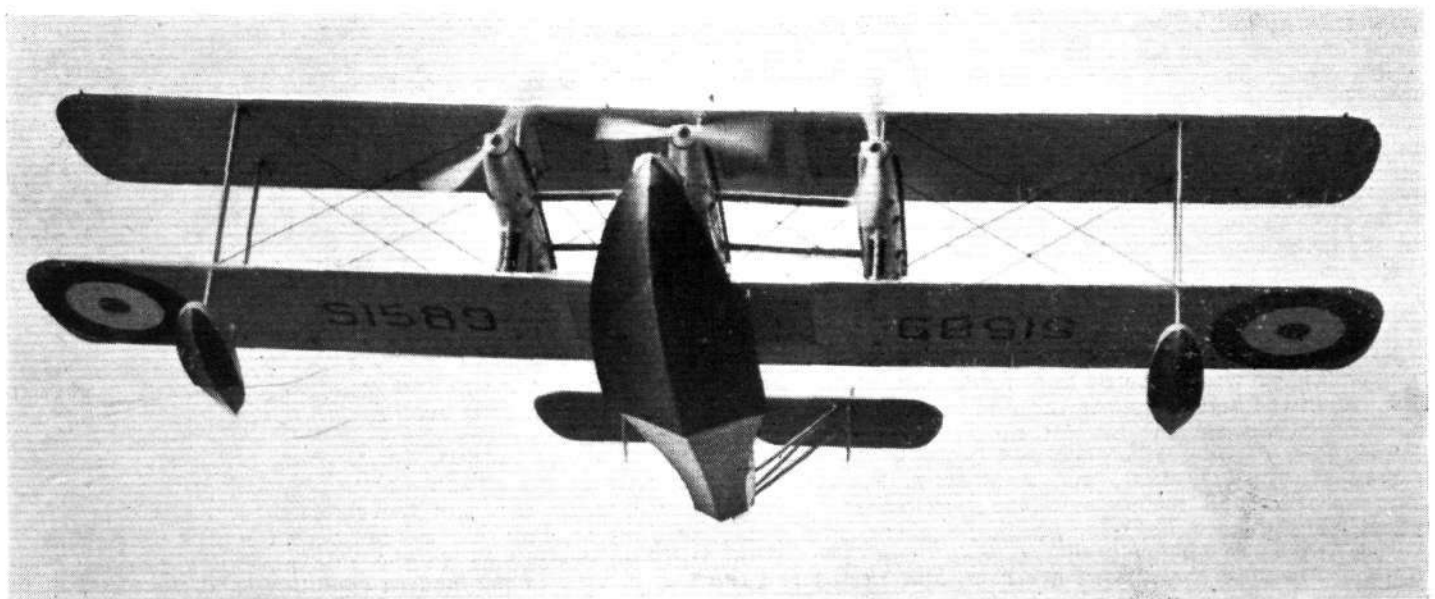
HERR VON GRONAU, who, as reported last week, flew from Borkum Is. to Labrador, via Iceland and Greenland, in a Dornier Wal seaplane, arrived in Montreal on July 26.

The U.S.S. "Macon"

WITH the placing in position of the eighth main frame of the duralumin skeleton of the U.S.S. *Macon*, sister ship of the U.S.S. *Akron*, the huge Navy ship now has 460 ft. of its 785 ft. total length in place in the Goodyear-Zeppelin dock in Akron, Ohio, where the ship is being built. Construction on this second airship is moving faster than on the *Akron*, due to the experience gained in the first ship and the fact that engineering plans and blue prints used on the *Akron* were available for the *Macon*. The *Macon* is to be a duplicate of the *Akron*, with the exception of a few minor alterations in some of the interior arrangements. The entire metal framework of the *Macon* has now been completed. Placing of the outer cover on the ship is now in process, starting at the tail and working towards the nose. Although no specified time has been set for the completion of the ship, indications are that it will be ready for trial flights about January 1, 1933. The *Macon*, after its formal acceptance by the Navy, is to be based at Sunnyvale, California, where a huge dock is now under construction. The construction of the *Macon* will attract many thousands of visitors to Akron, including, it is planned, many from Macon, Georgia, in whose honour the giant craft has been named, and from other sections of the south. Building of great rigid airships is an infant industry for America. After Goodyear acquired the German Zeppelin patents in 1924, Dr. Karl Arnstein, designer of some seventy Zeppelins at Friedrichshafen, came to Goodyear. As vice-president and chief engineer of the Goodyear-Zeppelin Corporation, Dr. Arnstein summoned from Germany a nucleus of airship builders, each an expert in his particular line, and around this nucleus he gathered several hundred men who were put through intensive training in specialised duties.

Denmark's First Woman Pilot

UPON her return to Copenhagen from Hamble, where she had undergone a course of instruction and qualified for the "A" pilot's licence with Air Service Training, Ltd., Mm. Ferslev, the wife of Lt.-Col. Ferslev, the head of the Danish Air Force, was entertained by the Board of the Union of Danish fliers in honour of her being Denmark's first woman pilot. The occasion was one of some importance and was described at length in the principal Copenhagen papers.



AN "EEL'S EYE" VIEW: The six-engined Short Military Flying Boat (Rolls-Royce "Buzzards") flying overhead, piloted by Mr. Lankester Parker. This photograph gives a very good idea of the shape of the underwater portion of the hull. (FLIGHT Photo.)

Correspondence

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

THE "HERMES" IN THE KING'S CUP

[2800] On reading your article on the King's Cup race in FLIGHT of July 15 I notice I am stated to have not been "perfectly satisfied" with my engine on reaching the Bristol Control.

I think there must have been a mistake or misunderstanding, for I was perfectly satisfied with the performance of my "Hermes" engine throughout the race. In fact, I was perfectly satisfied with most things. The Controls were splendidly organised, and I was even satisfied with my handicap, the only snag being that twenty machines had better ones!

WINIFRED BROWN.

Croydon, Surrey.
July 21, 1932.

BETTER VALUE FOR MONEY

[2801] In 1927 I bought a D.H. 60 "X Moth," with a Cirrus II engine, and learned to fly.

Two years later, in keeping with the common habit relating to automobiles, I sold my aeroplane in part exchange for a D.H. 60 "G Moth," with Gipsy I engine. The transaction was in every way justifiable—even more so than the exchange of a 1927 car for a 1929 model. My second machine, as compared with the first, had a vastly improved under-carriage, automatic slots and an engine better cowled in. Moreover, the engine, though of roughly the same overall dimensions and weight was more powerful, was designed to a more generous specification of strength to horse-power, consumed less oil and was more reliable in service, these being improvements one would expect from the period of years which had elapsed between the designs of the two engines in question. The second machine was, therefore, a more convenient and much safer proposition than the first, and its market price, with all these improvements, was round about the same as that of my first machine two years before.

To-day, three years later, I am in the position of wanting to exchange this second machine for a new model. In the matter of value for comparative prices, however, the exchange of an aeroplane to-day is a much less favourable proposition than the exchange of a 1929 car for a 1932 model. What I should like in the way of an aeroplane is something a bit faster, a bit more comfortable, with a bit more generous accommodation of space and weight allowance for passenger and luggage, but, above all, a safer and more blunder-proof machine, more useful for small-field work, more independent of the large aerodrome, and a machine of the same or lower market value than that of the 1929 model. It is true that I can get some of these advantages by buying at a considerably higher figure; but, even at a higher figure, I can get very little in the way of improvements in safety of handling and ease of take-off and landing. I have, therefore, reluctantly decided to stick to my 1929 model as a better all-round proposition than anything offered on the market to-day.

Rival designers may regard this as a generous tribute to the makers of the "Moth," but one wonders why even

that manufacturer has not in the lapse of three years produced something which shows the same advance in value for money in respect of the requirements of the amateur touring-pilot as is offered in the automobile trade. (What about the "Fox Moth"?—ED.)

Prices of everything seem to have come down except those of aeroplanes. Is there no sense in the dinning cry of the "man in the street" for a machine of the tennis-lawn type? The Guggenheim Trustees appreciated the reality of this demand, and their competition produced amazing advances in performance in such types as the "Gugnunc," but the "Gugnunc" to-day is still only an exhibition machine, trotted out annually to show the public what can be done. It does seem strange that there is nothing in production to-day to beat the Avro design of 1912 for taking passengers into and out of small fields.

A. H. DOWNES-SHAW.

Bristol.

July 30, 1932.

NATIONAL BENZOLE MIXTURE.

[2802] Referring to the article appearing in your issue dated July 22 dealing with the manufacture of Benzole, I feel that this is likely to be rather misleading to the "man in the street."

The article refers many times to Motor Benzole—and states that as a fuel for aviation purposes it is becoming increasingly popular. Is not this incorrect? in that it is really Benzole Mixture which is becoming more widely used.

There seems a vast difference between Benzole and Benzole Mixture—the latter, I believe, being petroleum spirit of a given grade to which is added quite a moderate proportion of pure Benzole.

Prior to the war pure Benzole was obtainable at most garages at 1s. 4d. per gallon and proved a delightful fuel to run on. This, of course, was entirely British made, but the Benzole mixtures obtainable to-day apparently contain a very large proportion of either imported motor spirit or refined imported crude petroleum.

A little enlightenment here seems to be required, especially as in the article mentioned above it refers "to those who have the interests of home produced fuel at heart." It seems that when one purchases Benzole Mixture one is getting a small proportion of the home product and still a large proportion of imported spirit.

I am only a motorist and an onlooker, so to speak, and I may be quite wrong in my assumptions, in which case I should be glad to be corrected.

W. R. BURNETT.

London, N.2.

[Our correspondent is, of course, quite right in pointing out that it is National Benzole Mixture which is becoming widely used. We think, however, that he has somewhat misunderstood the purpose of the article to which he refers, which was to tell our readers something about the production of Benzole. The mixing of this with other fuel is a purely mechanical process, and did not, therefore, require any particular mention in the article.—ED.]

"Glorious" v. "Florida."

JUDGMENT was delivered in the Admiralty Division on July 22 in the action against the Admiralty arising out of a collision between the aircraft carrier *Glorious* and the French liner *Florida*, which occurred in fog in the Mediterranean on April 1, 1931, and resulted in the death of 22 passengers and members of the crew of the French vessel. Mr. Justice Bateson, giving judgment, said both vessels were to blame, the *Florida* more so than *Glorious*, because she altered her helm and ported across the bows of the *Glorious*. Therefore his lordship apportioned two-thirds of the blame upon the *Florida* and one-third upon the *Glorious*. The *Florida* was to blame for high speed in fog, not stopping on hearing the whistle of

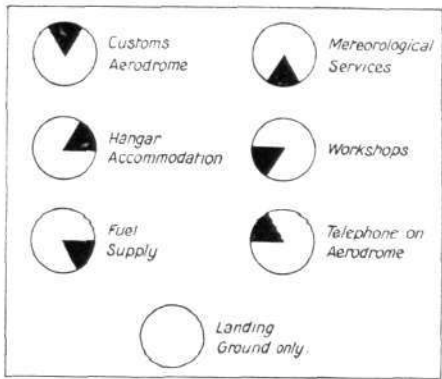
the other ship, and for porting. The judge added that he was advised it was unseamanlike to approach an aircraft carrier with planes in the air as the *Florida* did. She ought to have given the warship a wider berth. *Glorious* was to blame for high speed in the fog and not stopping on hearing the whistle of the *Florida*. His lordship believed the evidence of the commander, officers, and men of *Glorious*, but he could not accept a good deal of plaintiffs' evidence. As to the rule governing navigation in fog, in view of the modern conditions and the existence of aircraft and aircraft carriers, the judge thought that possibly the rule should be altered to provide that when aircraft were in the air a wide berth should be given to the carrier by other vessels.

The Industry

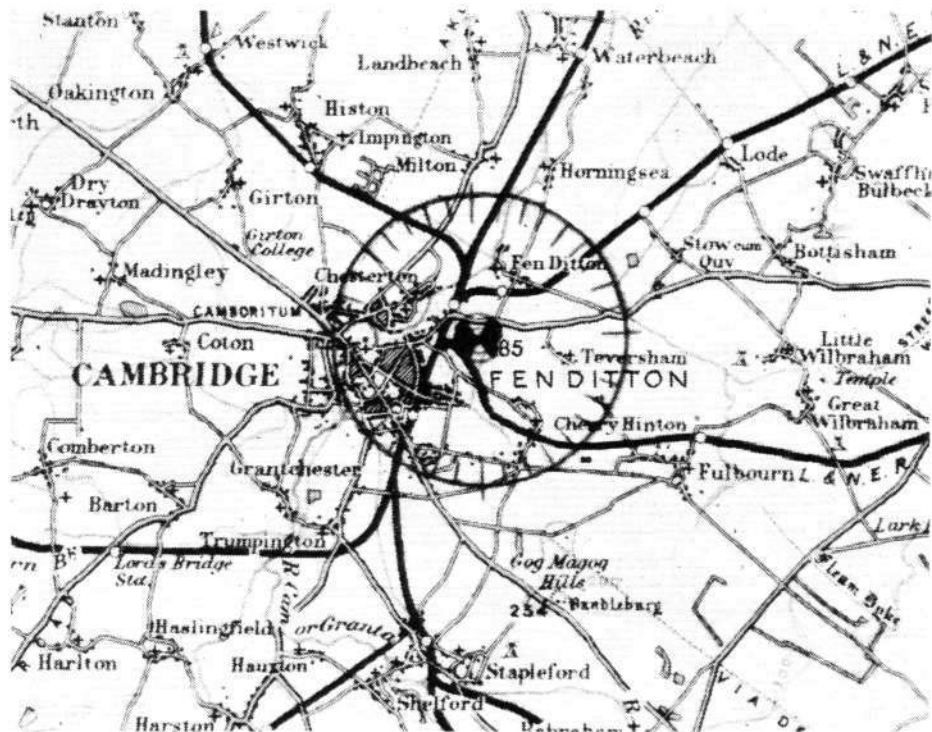
MAPS FOR FLYING

PROVISION of adequate maps for the use of pilots, particularly when flying open aircraft, has long been a matter of careful study by many authorities. Among the thoroughly practical ones which fulfil, in almost every detail, just what the pilot wants are those issued by the Automobile Association. These are mounted on cloth in a manner which includes the largest possible area on each sheet without it becoming unwieldy, while owing to the clever method of folding no sheet need ever be completely unfolded in the air; furthermore, a generous overlap between the sheets enables the pilot to pass from one sheet to another quite easily. These maps are based on the $\frac{1}{4}$ -in. Ordnance Survey, with the meridians added, so that compass bearings may be worked out quite readily. The contour colouring is that which has now been adopted for flying maps, wherein the lowest contour is 200 ft., the colouring below and above this up to 400 ft. being white and above 400 ft. increasingly dark shades of buff. By this means it is possible for woods and forests to be coloured green and for the high ground still to stand out boldly. Naturally, everything of value from the flying point of view has been accentuated, and we find that all things like railways, wireless masts, prohibited areas, danger areas, woods, canals, rivers, and aerodromes are very prominent. The method of marking the aerodromes is unique and relieves the pilot of a very great deal of trouble. Each aerodrome is surrounded by a small compass rose divided into ten's of degrees, and all that is therefore needed to find a bearing from an aerodrome, or a course from one aerodrome to another, is to read off where the line between the

objects cuts this compass rose. The local magnetic variation is marked quite clearly on each sheet, thus enabling the pilot to find the magnetic bearing easily. The centre of each compass rose around an aerodrome is also utilised to indicate the facilities provided at these aerodromes, and reference to our diagram will show how this is done. Naturally, these maps are thoroughly waterproof, and pencil



The legend used in marking the aerodromes showing the facilities available.



Cambridge (Fen Ditton) as it appears on Sheet 3 of the A.A. Series of $\frac{1}{4}$ -in. Flying Maps. It will be seen that this aerodrome is 85 ft. above sea level and that telephone, workshops, hangars and fuel supply are available.

marks on them may be taken off with indiarubber without damage. It is difficult to suggest any way in which maps like these can be improved, but there is one point, already receiving the attention of the Air Ministry, which will have to be seen to sooner or later, and that is the network of high-tension cables which is rapidly spreading all over the country. The places where these cables, together with their pylons, are led over high ground, thus constituting particular danger to aircraft, might well be marked on these maps, for it seems an unfortunate fact that wherever these cables cross a high ridge, they have to be supported on pylons considerably higher than those on the level ground in order to obtain a safe clearance between the cables and the ridge. It will also be of great advantage to private owners if the many private landing grounds, which have recently come into being, were marked as well as the licensed aerodromes. These maps are naturally expensive, but the A.A. keep a library from which their members may hire maps as required, and they also have an arrangement with Airwork, Ltd., whereby a stock is carried both at Heston and at Cairo.

AN AID TO NAVIGATION

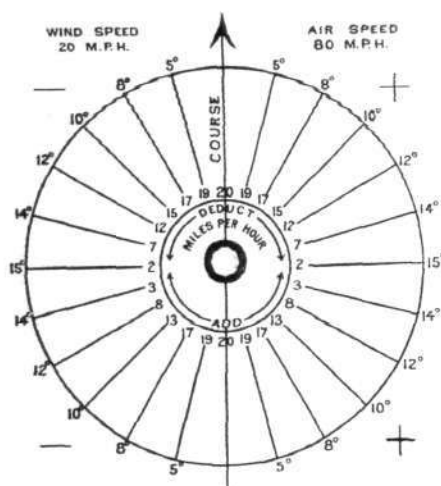
DESIGNED by Sir Kenneth Crossley and produced by Stanford's Geographical Establishment of 12, 13 and 14, Long Acre, London, W.C.2, the little Course and Speed Calculator shown in one of our illustrations should be a very useful addition to the navigation equipment of any private owner's aeroplane, especially as, unlike the average run of accessories, it is sold at the very modest price of 1s.!

The Crossley Calculator consists of a stiff card on which are printed two circles graduated into 24 divisions. The left half, and figures, of the outer circle are printed in red, and the upper half and figures of the inner circle also in red. Red denotes subtraction and black addition. The Calculator is available in four speeds: 80, 90, 100 and 110 m.p.h. The one illustrated is for a cruising speed of 80 m.p.h.

For the course to steer it is only necessary to take the magnetic course and to add or subtract the number of degrees which the wind direction makes with it. This gives the division on the outer circle, which indi-



Showing the convenient method by which the A.A. maps are folded.



The Crossley Course and Ground Speed Calculator

icates the allowance to be made for wind. The same division on the inner circle gives the alteration, plus or minus, made to the ground speed by that wind. If the wind speed is 20 m.p.h., the figures are read direct. If, however, the wind speed is any other figure, an allowance must be made according to the following table:

	Wind speed estimated at					
m.p.h. ...	5	10	15	25	30	35
take ...	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$

of the figures given on outer and inner circles.

Example.—Magnetic course, 331 deg. Air speed (cruising), 80 m.p.h. Wind, 30 m.p.h. at an angle of 75 deg. to course. By protractor, 75 deg. found to fall on 14 deg. division on outer circle. Therefore, course to steer is 331 deg. plus 21 (i.e., $14 \times 1\frac{3}{4}$) = 352 deg.

In the same way the ground speed is found to be 80 minus $10\frac{1}{2}$ (i.e., $7 \times 1\frac{1}{2}$) = 69 $\frac{1}{2}$ m.p.h.

RADIO EQUIPMENT FOR EMPIRE AIR ROUTE

CAREFUL attention has been given to the question of radio equipment for the new Armstrong-Whitworth "Atalanta" monoplanes which will be used by Imperial Airways on their Cairo-Cape Town route. The equipment selected was designed by Standard Telephone & Cables, Ltd. The order was only placed after thorough tests, carried out over the trans-African route. At the exhibition recently held at Hendon by the S.B.A.C. the Standard Co.'s set displayed was the one that had been tested out in Africa under full service conditions.

The equipment consists of separate units, which can be arranged as a combined long and short wave transmitter, or for either long or short wave working only. The weight, including wind-driven generator, fixed and trailing aerals, headphones, telegraph key, etc., is approximately 80 lb., which is considerably less than any other comparable type of equipment yet produced. Operation can be performed either by a qualified radio operator who has direct access to the apparatus or by the pilot.

SHORT WAVE TRANSMITTER

This unit is a complete radio transmitter for operation on any wave-

length between 40 and 80 metres. It will transmit either Telephony, C.W. Telegraphy, or I.C.W. Telegraphy, change over from one system to another being made by a switch on the unit. Five valves are employed.

The Master Oscillator Circuit is calibrated in wavelengths and the tuning controls are arranged with special click stops adjustable to any two wavelengths. In this way the operator can transfer rapidly from one wavelength to another without the use of a wavemeter or reference to any calibration.

Modulation for Telephony or I.C.W. is carried out at high power. For I.C.W. signalling the modulators generate a frequency of 1,000 cycles, and with this system there is no reduction of power when transmitting I.C.W. or Telephony signals.

The Short Wave Transmitter normally works in conjunction with a special fixed aerial carried between wing tip and tail.

The unit also contains a switch transferring the circuits from the short wave coils in the long wave loading unit and an aerial relay which changes over the fixed aerial from the short wave transmitter to the receiver.

The output energy is approximately 25 watts on C.W., I.C.W. and Telephony.

LONG WAVE LOADING UNIT

This unit contains the coils for the transmission on long wavelengths for 500 to 1,500 metres. The output is normally connected to the trailing aerial, but can also be used on the fixed aerial, which for this apparatus is connected with both halves in parallel.

RECEIVER

This is a combined long and short wave receiver, variable between 30 and 80 metres and between 500 and 1,600 metres.

Three screen grid valves are used for long wavelength reception, and tuning is effected by means of four variable condensers ganged and controlled by a single dial. For reception of C.W. signals the detector valve

is made to oscillate by means of a fixed reaction condenser which is brought into circuit by a switch. For short wave reception the superheterodyne principle is employed. Tuning is effected by means of three ganged condensers connected in the aerial circuit, the grid circuit, and the anode circuit, respectively. There is, therefore, one tuning control for short wave working and one for long wave working.

CONSTRUCTION

The Transmitter and Receiver are built in chassis form, the chassis being a strong framework of aluminium carrying all components and wiring, which can be withdrawn from its case intact.

The complete framework is carried in a light wooden case made of strong ply wood. The transmitter and receiver are hung in a shock-absorbing suspension which insulates them from vibration. The control panel can be placed in any position convenient to the pilot or a radio operator.

POWER SUPPLY

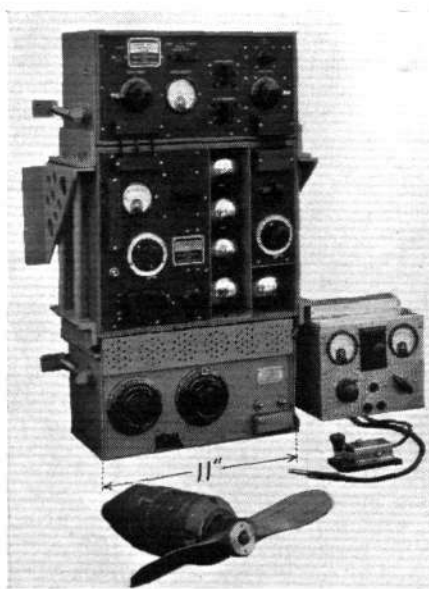
The transmitter requires a supply of 300 m.a. at 500 volts and 4 $\frac{1}{2}$ amps. at 12 volts. The receiver takes 30 m.a. at 150 volts for its high-tension supply. A dual wound air-driven generator provides the power for both transmitter and receiver.

"TILTRACK" YOUR STORES

IN every aircraft manufacturing factory an efficient stores department for the storing and issuing of the multitude of aircraft components, in constant demand by the shops, is essential for maintaining the allotted factory output. To ensure its efficiency the stores department must be properly equipped. The catalogue of Bertram Thomas, 28, Victoria Street, Westminster, S.W.1, describes and illustrates the large variety of stores equipment produced by that company, embodying their method of storing known as "Tiltrack." It is a flexible system, permitting additions and alterations and the positioning of the stores so that all are in sight and easily accessible. The equipment essentially consists of removable sheet steel trays supported upon racks and tilted downwards towards the front.

ELECTRICAL RESISTANCE ALLOYS

A NEW catalogue of "Telcon" electric resistance materials, which are distributed by Wild-Barfield Electric Furnaces, Ltd., and manufactured by the Telegraph Construction & Maintenance Co., is issued by the former, whose address is Elecfurn Works, North Road, Holloway, N.7. Details are given of electrical resistance alloys called "Pyromic," "Calomic" and "Telconstan." The first is highest grade induction melted 80/20 nickel chromium for working temperatures up to 1,150 deg. C. "Calomic" is an induction-melted nickel-iron-chromium alloy, and "Telconstan" an alloy of copper and nickel, with a negligible temperature coefficient, for electrical rheostats, starters, shunts, etc., induction melted.



For Empire Air Routes. The Standard Telephones and Cables Co.'s radio set fitted to the Armstrong Whitworth "Atalanta" aircraft.

THE ROYAL AIR FORCE

London Gazette, July 26, 1932.

General Duties Branch

C. S. Byram is granted a short-service commn. as Acting Pilot Officer with effect from and with seny. of July 11. The follg. Pilot Officers are promoted to rank of Flying Officer:—G. R. Moorby, W. T. H. Nichols (June 20); A. L. Christian, R. H. Harris, L. S. Lamb (July 10).

Flt. Lt. F. Woolley, O.B.E., D.F.C., is placed on half-pay list, Scale A (July 10); Flt. Lt. E. C. Delamaine, M.C., is placed on half-pay list, Scale A (July 14); Sqdn. Ldr. F. W. Trott, O.B.E., M.C., is placed on half-pay list, Scale A (July 23); Flt. Lt. G. Bowen is placed on retired list on account of ill-health (Feb. 14) (substituted for *Gazette* Feb. 16); Air Comm. the Hon. J. D. Boyle, C.B.E., D.S.O., is placed on retired list at his own request (July 9); F/O. J. R. Mathews is transferred to Reserve, Class C (July 18).

Medical Branch

F/O. J. F. S. Wiseman, M.B., Ch.B., is promoted to rank of Flt. Lt. (July 23).

ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The follg. are granted commns. in Class AA (ii) as Pilot Officers on probation:—M. L. Docker, P. J. Poncia, J. K. Rotherham (July 11); E. F. Tyler (July 13); M. M. Carter (July 18). The follg. Flying Officers are transferred from Class AA (ii) to Class C:—E. H. Armitage (May 26, 1931); M. G. B.

Clark (May 27). F/O. A. E. Hill is transferred from Class C to Class A (July 9).

Flt. Lt. W. G. Preston, D.F.C., is transferred from Class A to Class C (Oct. 24, 1931); Class C to Class B (July 20).

The follg. Flying Officers relinquish their commns. on completion of service:—K. C. Whitwell (Dec. 16, 1931); B. B. F. Russell (March 17). F/O. C. E. C. Penny (Captain, R.F., R.A.R.O.) relinquishes his commn. on completion of service and is permitted to retain rank of Flt. Lt. (June 6); *Gazette* May 3 concerning F/O. R. H. McIntosh is cancelled.

SPECIAL RESERVE

General Duties Branch

P/O. on probation R. H. Watson is confirmed in rank (June 22); F/O. G. D. S. Horsfall is transferred to Reserve of Air Force Officers, Class A (July 7).

AUXILIARY AIR FORCE

Medical Branch

No. 608 (NORTH RIDING) (BOMBER) SQUADRON.—F/O. J. E. Howell, M.B., Ch.B., is promoted to the rank of Flt. Lt. (July 9).

Erratum

In the notification in the *Gazette* of July 12 concerning Flying Officer A. T. G. Thomas, M.B., B.S., for July 7, 1932, read July 7, 1931. (Substituted for Erratum notice in the *Gazette* of July 19.)

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders: C. C. Darley, C.B.E., A.M., to Air Ministry, Dept. of C.A.S. (D.O.S.D.) 11.7.32, for Air Staff duties vice W/Cdr. R. L. G. Marix, D.S.O., R. H. G. Neville, O.B.E., M.C., to Sch. of Photography, S. Farnborough, 19.7.32, to Command vice W/Cdr. H. M. Probyn, D.S.O., J. H. Simpson to H.Q., Inland Area, Stanmore, 25.7.32, for Air Staff (Signals) duties vice S/Ldr. G. R. A. Deacon, M.C.

Squadron Leader W. D. Budgen, O.B.E., to H.Q., Air Defence of Gt. Britain, Uxbridge 20.7.32, for Personnel Staff duties vice W/Cdr. J. McCrae, M.B.E.

Flight Lieutenants: H. A. J. de S. Barrow to No. 32 (F) Sqdn., Kenley 11.7.32. C. W. Weedon to No. 1 Sch. of Tech. Training (Apprentices), Halton, 10.7.32. G. C. Shepherd to Home Aircraft Depot, Henlow, 10.7.32. H. R. Bardon to No. 1 Sch. of Tech. Training (Apprentices), Halton, 10.7.32. P. M. Watt to H.M.S. *Hermes*, 8.7.32.

Flight Lieutenants: M. C. Pascoe, to R.A.F. Base, Calshot, 13.7.32. P. E. Berryman, to Home Aircraft Depot, Henlow, 13.7.32. H. J. Collins, to H.Q., Fighting Area, Uxbridge, 6.7.32. R. M. Foster, D.F.C., to H.Q., Iraq Command, Hinaidi, 7.7.32.

Flying Officers: F. R. Drew to R.A.F. Base, Calshot, 12.7.32. J. B. Knapp to No. 500 (County of Kent) (B) Sqdn., Manston, 11.7.32. J. E. Allen to No. 201 (F.B.) Sqdn., Calshot, 21.6.32. T. B. Cooper to No. 204 (F.B.) Sqdn., Mount Batten, 21.6.32. E. M. Gurney to No. 209 (F.B.) Sqdn., Mount Batten, 21.6.32. D. M. Gordon to No. 210 (F.B.) Sqdn., Pembroke Dock, 21.6.32. F. R. Newell to No. 502 (Ulster) (B) Sqdn., Aldergrove, 11.7.32.

Flying Officers: J. K. Flower, to No. 216 (B.T.) Sqdn., Heliopolis, Egypt, 4.7.32. D. Dickson, to No. 10 (B) Sqdn., Boscombe Down, 13.7.32. C. Ryley, to Marine Aircraft Experimental Establ., Felixstowe, 19.7.32. S. R. Ubee, to No. 70 (B.T.) Sqdn., Hinaidi, 27.6.32. G. N. E. Tindal-Carill-Worsley, to Air Armament School, Eastchurch, 17.7.32. B. Paddon, to Home Aircraft Depot, Henlow, 14.7.32.

R.A.F. AIRCRAFT APPRENTICES, HALTON

THE following are extracts from the annual report by Air Vice-Marshal N. D. K. MacEwen, C.M.G., D.S.O., Air Officer Commanding, Royal Air Force, Halton, upon the occasion of the passing-out of the 20th (September, 1929) Entry of Aircraft Apprentices. The inspection was carried out by Air Vice-Marshal C. B. Burnett, C.B., C.B.E., D.S.O., Deputy Chief of the Air Staff.

The apprentices now passing-out from Halton are the 20th entry to pass into the service on completion of the course of apprenticeship training.

Of the 618 boys originally attested:—80 were posted to the Electrical and Wireless School for training as Electricians and Wireless Operator Mechanics; 8 were granted discharge by purchase; 18 were discharged on medical grounds; 7 were discharged as "unlikely to become efficient airmen"; 2 were re-mustered to Aircraft hands; 38 were transferred to junior entries; while 40 were transferred from senior entries; and 2 were transferred, 1 from Records Ruislip, and 1 from Electrical and Wireless School, Cranwell; leaving 507 to pass out from No. Apprentices Wing, Halton.

These have been trained in the following trades:—Fitters, Aero Engine, 233; Metal Rigger, 203; Fitters, Armourer, 57; and Coppersmiths and Sheet Metal Workers, 14.

As a result of the final examinations:—55 aircraft apprentices, representing 10.8 per cent. of the entry, have been classified as Leading Aircraftmen; 320, representing 63.1 per cent. of the entry, have been classified as Aircraftmen, 1st Class; 123, representing 24.2 per cent. of the entry, have been classified as Aircraftmen, 2nd Class; 1 Aircraft apprentice failed to qualify; and 8 were not examined owing to sickness.

The standard of discipline set by previous entries has been well maintained. The barrack rooms have been kept up to a high standard of cleanliness, and the apprentices have learned how to keep their kit and equipment in a clean and serviceable condition. In the field of sport, while not providing any outstanding individual performances, this entry has shown very good collective ability. A keen sense of fair play and team spirit has been strongly developed. The technical training of the entry has been accomplished with satisfactory results. The apprentices have shown commendable keenness and have adapted themselves well to their trades.

Fitters, Aero Engine.—The completed exercises of this trade show a high standard of skill in basic fitting. As a basis of their engine instruction, the Lion and Jaguar engines have been used, while the mechanical transport instruction has been confined to the Morris six-wheeled vehicle.

Metal Riggers.—The basis syllabus for this trade is now fixed on the lines of a Light Metal Fitter. The completed exercises of this entry show a very high standard in this most important part of their training. A large amount of good work has been accomplished by the entry in reconditioning from crashes two Wapiti and one Siskin air frames, as well as completely building a Mussel air frame, and three Southampton Wing Tip Floats from raw material.

Fitters, Armourer.—The Fitters, Armourer, have been somewhat handicapped, owing to the large number of apprentices in the entry; 57 being the greatest number that have been trained in one entry at Halton. The standard of proficiency in basic fitting is quite good, and the knowledge of armament subjects is also very good.

Coppersmiths and Sheet Metal Workers.—The coppersmiths of the entry have shown great keenness during their period of workshop training, and have reached a high standard of efficiency at their trade.

Educational Training.—A high average of zeal and attainment has been maintained throughout.

As a result of the final educational examination:—51 gained the "A" certificate, i.e., 75 per cent. or over; 384 gained the "B" certificate, i.e., over 50 per cent. and under 75 per cent.; while 74 obtained less than 50 per cent. of the total number of marks.

Health.—The health of the entry has been very satisfactory, and although sporadic cases of infectious disease, including Scarlet Fever, Diphtheria, Measles and Mumps have occurred in the wing, this entry was no more affected than others.

Awards.—The following is a list of awards:—

Grand Aggregate, 1st prize: L.A.C. Treves, S. L.; 2nd prize: L.A.C. Armstrong, F. V.; **Fitter Aero Engine,** 1st prize: L.A.C. Muirhead, I. J.; 2nd prize: L.A.C. Ellender, A. B., and L.A.C. Carr, W. J.; **Metal Rigger,** 1st prize: L.A.C. Treves, S. L.; 2nd prize: L.A.C. Armstrong, F. V. **Educational Subjects:** L.A.C. Treves, S. L.; **Fitter Armourer:** L.A.C. Plank, E. D.

The Lord Wakefield Scholarship has been awarded to L.A.C. Yaxley, R. G.

Cadetships.—Cadetships have been offered to L.A.C. Yaxley, R. G., and A.C.1 Kirk, J. E.

Elliott Memorial Prize.—The Elliott Memorial Prize has been awarded to L.A.C. Bushell, J. M.

AIR POST STAMPS

By DOUGLAS ARMSTRONG

Santos Dumont Stamps

Air post collectors are the fortunate possessors of some interesting souvenirs of the late M. Alberto Santos Dumont, whose death at San Paulo (Brazil), on July 24, was mourned throughout the world. His early exploits in aerial navigation are recalled by certain of the current air mail stamps of Brazil, designed by Dr. G. Barroso in 1929-30. The 200 reis vignette shows his first airship "N6" successfully encircling the Eiffel Tower on October 19, 1901, thereby winning the Grand Prix of the French Aeronautic Club amounting to Fr. 125,000. On the 500 reis denomination he is seen demonstrating his biplane "14 bis" before the Aero Club of France on November 12, 1906, whilst finally a portrait of the pioneer aviator, who has been named "the father of flight," as the subject of the highest value of the series, viz. 10,000 reis.

"Luposta" Impressions

By all accounts the international air post exhibition which was opened in the Franciscan Monastery at Danzig on July 23 was a most successful enterprise, attracting visitors and entries from all parts of Europe. The outstanding exhibits appear to have been those of Miss W. Penn Gaskell, whose "Pioneer" and "Crash" covers aroused extraordinary interest, and Dr. Nirenstein, of Vienna, who sent all the choicest pieces from his celebrated collection of "flown covers."

Official exhibits were entered by the postal administrations of Danzig, Austria and Liechtenstein and included a remarkably interesting series of artists' drawings, proofs, essays and colour trials for the air post stamps of their respective countries. The enterprising S.C.A.D.T.A. concern showed a complete collection of the semi-official aerovignettes issued under its auspices in Colombia and elsewhere containing all the "initial" overprints of the different agencies.

Apart from the British entries, reviewed last month, the most notable exhibits by private collectors were shown by Messrs. Ruberg (Danzig air mails very artistically written up), Schweitzer (Syrian air stamps specialised), Sieger (Zeppelin mail stamps and cachets), Lusitia, Petersilie, Wertzinger and Sobetzky.

Ottawa Air Mail

For the purpose of the combined air and ocean mail service organised by the Canadian Post Office Department for the speeding up of mails in connection with the Imperial Economic Conference at Ottawa last month (July), the contemporary 5 cents air mail stamp of the Dominion (Mercury motif) has been overprinted "Ottawa Conference 1932" in two lines of small, bronze-blue capitals and twice surcharged with a bold figure "6" above, in ink of the same colour. This stamp was first employed for the special air mail flight carried out on or about July 12 between Ottawa and Bradore Bay, Belle Isle Strait, when a distinctive cachet was also applied to all correspondence carried. A special air mail despatch in the opposite direction was made by the British Post Office on July 13 per the S.S. *Empress of Britain*, but so far as is known at the time of writing no distinguishing postal markings were struck.

Latest "Zeppelin" Flights

When the famous airship *Graf Zeppelin* paid her flying visit to England on July 2 and 3 she brought with her some hundreds of letters and postcards all impressed with a souvenir cachet in bright yellow ink comprising an outline of the dome of St. Paul's in conjunction with the inscription "Luftschiff Graf Zeppelin-Englandfahrt 1932." So far as is known no mail was carried on the return flight to Friedrichshafen.

Another recent addition to the ever-growing collection of Zeppelin post souvenirs hails from the pocket principality of Liechtenstein, where the dirigible touched on June 28 to pick up a special mail upon which was struck a distinctive cachet in blue in the form of an outline of the Zeppelin superimposed upon the royal arms and surrounded by a circular inscription reading "Ftm. Liechtenstein—Zeppelin Post 1932."

Paris-Noumea Flight Souvenirs

Examples have only just come to hand of two stamps of New Caledonia which in May last received a commemorative overprint in honour of the arrival at Noumea, the capital, of the French aviators Verneilh, Deve and Munch at the conclusion of a non-stop flight from Paris, on April 5 of this year. Unfortunately their machine met with disaster on

landing, and the Governor of the colony accordingly authorised the preparation and sale of 3,000 pairs of particular postage stamps with the object of raising a fund for the necessary repairs. In view of the limited issue not more than one copy of each stamp was allotted to every applicant. They consist of contemporary postage stamps of the island overprinted with the outline of an aeroplane "full on," surmounting the dedication "Paris-Noumea—Verneilh-Deve-Munch—5 Avril 1932" in three lines of type.

Sudan's Emergency Air Stamp

To meet the newly instituted 2½ piastres rate for air mail letters in the Sudan some 20,000 copies of the existing 2 piastres postage stamp in the familiar "Camel postman" design, were overprinted "Air Mail" and surcharged with the requisite denomination in European and Arabic figures on July 22. A definite stamp of the same face value may be expected to follow in due course.

Leonardo da Vinci Stamp

Coincident with the appearance of a biography of the "Faust of the Renaissance," a portrait of Leonardo da Vinci himself is about to be presented upon a new Italian air mail stamp of the face value 100 lire that has been prepared in response to representations by the banks and aero-transport companies for franking large, insured packages transmitted by air over the South American and other long-distance air mail routes. Beneath the likeness of the great inventor is a tablet bearing the inscription "L'Uomo con le sue Grandiali Facendo Forza Contro l'Aria Potra Soggiogarla e Levarsi Sopra di Lei."



Fatal Parachute Jump

MR. R. E. HOPKINS was killed while attempting a parachute jump from an aeroplane piloted by Flt. Lt. Spencer at the Littleport (Cams.) Horticultural Show on July 26. The parachute, it appears, got caught in the tail of the machine, which got out of control and crashed to the ground. The pilot escaped with a number of minor injuries.

Repair Work at Heston

An interesting major repair of considerable magnitude has just been completed by the Airwork Service Department on the Pobjoy "Klemm," G-ABTE, of Mr. Gibbons. As the result of a collision with a tree, one of the wings was damaged in such a manner as to completely break up approximately half the front box spar from the root end outwards. A repair scheme was devised and drawings prepared, which received the approval of the German Aeronautical Inspection authorities. Practically half the wing was reconstructed in the Airwork Service Department, at the cost of roughly one-third of the price of a new wing. The repair is interesting in that this is the first time a wing repair of this type and magnitude has been carried out in this country.



PUBLICATIONS RECEIVED

The Story of the Airship. By Hugh Allen. The Goodyear Tire and Rubber Co., Inc., Akron, Ohio, U.S.A. Price 50 cents.
Around The World in Eight Days. By Wiley Post and Harold Gatty. London: John Hamilton, Ltd. Price 7s. 6d.
Vickers Limited and Its Interests. Vickers, Ltd., Broadway, London, S.W.1.

Catalogue

The Boyes Type All-Steel Expandable Buildings. The Lewis Constructional Co., Ltd., Steleonite Works, Old Ford, London, E.3.



AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m = motors. The numbers in brackets are those under which the Specification will be printed and abridged, etc.).

APPLIED FOR IN 1931

Published August 4, 1932.

- 7,020. SOC. DES MOTEURS SALMON. Ignition for i.c. engines. (376,274).
- 9,146. M. G. CORNET. Aerially-propelled tractors. (376,326.)
- 10,542. AIRCRAFT PATENTS, LIMITED and G. H. COOKE. Devices on aircraft for arming the fuzes of bombs dropped therefrom. (376,349.)
- 10,704. VICKERS (AVIATION), LTD., and B. N. WALLIS. Spars or girders for use in aircraft construction. (376,364.)
- 10,705. VICKERS (AVIATION), LTD., and B. N. WALLIS. Apparatus for assembling and securing strengthening sleeves to ends of tubular members. (376,365.)
- 28,117. FIAT SOC. ANON. Disconnecting-device for aeroplane controls. (376,569.)
- 31,071. C. ARNOLD. Toy flying machine. (376,609.)
- 32,387. SOC. ANON. DES ETAB. REPUSSEAU ET CIE. Aeroplanes. (376,616.)
- 34,826. H. C. A. POTEZ. Elastic seaplane undercarriages. (376,634.)

APPLIED FOR IN 1932.

Published, August 4, 1932.

- 3,239. NAAMLOOZE VENNOOTSCHAP PHILIPS' GLOEILAMPONFABRIEKEN. Light beacon for air traffic and for navigation, etc. (376,668.)